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Internationalization and Competition in Small Manufacturing Firms

by

Timo Mikael Lautanen

Thesis submitted for a degree of Doctor of Philosophy to the
University of Warwick Economics Department

May 1998

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Acknowledgements

I am really grateful to a number of people who have in one way or another had contributory influences on this work. First of all, I would like to express my gratitude to my supervisor Professor Michael Waterson at the Warwick University Economics Department for his continuous and unconditional support for this thesis. Mike's encouraging and instructive comments and the time he has offered even whilst busy as the General Editor of the JIE have been crucially helpful for the thesis, and are things I will never forget. I also want to thank warmly Dr. Heikki Eskelinen at the Karelian Institute of the University of Joensuu in Finland for his support and encouragement of my PhD project from the very beginning. The 86 business managers in Finland who I have at different stages interviewed for hours in the course of this research, deserve my sincere thanks for their cooperation, without which this firm-level research could never have been completed.

I also want to acknowledge Professor Paavo Okko at the University of Vaasa for his valuable background support for my post-graduate studies. Comments by Dr. Aydin Hayri, who was my second supervisor for a short time before leaving Warwick, Dr. Otto Toivanen, participants of a number of seminars at the Department of Economics at the University of Warwick and the Centre for Small and Medium-sized Enterprises at the Warwick Business School, and participants

in the EARIE 1997 conference in Leuven have contributed to improve some parts of the study. Of these participants in seminars and the conference I would especially like to acknowledge comments by Prof. David Storey, Prof. Keith Cowling, Dr. Robert Cressy, Prof. Norman Ireland and Prof. Gavin C. Reid. Guy Vernon helped me to revise a manuscript of the thesis for mistakes in language. Further, I want to take this opportunity to thank Lea Kervinen and Tuula Nylander at the Karelian Institute for their consistent help in practical matters related to my work, not only during the PhD project but over a period extending back many years earlier. Finally, I want say thanks to my other friends - fellow students, scuba divers and others - for providing an enjoyable environment in which to carry out this work. Naturally, with respect to all those mentioned, the usual disclaimer applies.

Financial support for the PhD project has come from several sources which I would like to acknowledge. The initial funding for the project came from the Yrjö Jahnsson Foundation, Helsinki. Continuing and finishing the thesis, however, is thanks to the financial support by the Academy of Finland (project 52333), Helsinki, Foundation for Economic Education, Helsinki, and Alfred Kordelin Foundation, Helsinki. The Karelian Institute and Institute for European Studies, Turku, subsidized the costs of collecting the data. My sincere thanks to all these institutions.

Coventry April 1998

Timo Lautanen

Declaration

A version of Chapter I has been published under the title "Economic Integration and Small Firms' Decisions to Export" by the Institute for European Studies, Turku. (Institute for European Studies, Discussion papers 4/96, Åbo 1997). Some parts of Chapter II have been included in the article "Industrial Competitiveness: A Firm-level View" (co-authored by Heikki Eskelinen, in Hyttinen, P. and P. Pelli (eds.) Regional Development Based on Forest Resources - Theories and Practices. European Forestry Institute, Proceedings No. 9, 1996). Both publications are outgrowths of this PhD study.

Summary

This study focuses on three topics in the behaviour of smaller manufacturing firms using theories from industrial economics as theoretical benchmarks. The study takes as its starting point the perspective of the individual enterprise rather than that of an industry or a market. For the study a considerable amount of new data was collected by interviewing about 80 small business managers in Finland up to three times by the end of 1997. The first of the three parts of the study considers the adoption of an export strategy. The non-linear econometric model adopted suggests that the adoption of an export strategy in small firms is in particular influenced by the language skills of entrepreneurs, and has become faster over time. The second chapter provides insights into the differentiation behaviour of industrial small firms. At the individual firm's level, vertical differentiation seems to have a special weight since horizontal differentiation is often limited by the requirement of technical compatibility, and because improving quality is perceived to incorporate lower risk than differentiation based on taste differences between customers. The third chapter studies exiting from export markets using the case-study method of research. There is no strong case for, or against, the export hysteresis in the data, and thus one can argue that the behaviour of the firms has been largely in accordance with the standard theory of a competitive industry. The lack of an explicit export strategy and concentration on exports to one country seem to contribute to exit where the nature of exporting can be described as opportunistic. Overall, the firm-level study presented here suggests the relevance of further studies using models of diffusion of innovations to theorize small business exporting and to taking better into consideration of an individual firm's perspective in studies on product differentiation. Moreover, demand side influences on export hysteresis should be studied further.

Introductory Chapter

This is an empirical study in industrial economics on smaller manufacturing firms in Finland. In recent years, the supporting of the preconditions for the operations of small businesses has become an increasingly important part of the industrial policy in Finland (see MTI 1993, Koskinen and Virtanen 1998). An indication of this is the establishment of the first SME Policy Programme in 1993. In the sequel to the economics crisis in the early years of the 1990s, smaller firms have received special attention because of their supposed impact on employment and the balance of trade. At the same time the ever more internationalised operational environments of firms, reinforced by Finland's decision to join the European Union in 1995, has set new challenges for many smaller firms. In essence, these challenges concern competitiveness and internationalization, with which two concepts this thesis generally speaking deals.

The study focuses on the decisions to export (chapter I), product differentiation (chapter II) and exit from export markets (chapter III). The conduct of the study has perhaps not been the cheapest - or indeed the easiest - way of doing a PhD study. Certainly, though, it has been one of the most informative concerning the operations of small firms. The data for the study has been collected by interviewing about 80 small business managers for 2 - 3 times in Finland, in

1992, 1996 and 1997. This effort is typified not only by the number of face-to-face interviews or the 25.000 kms on the road to reach the firms, but, in winter, temperatures of less than -30 degrees C (!). Due to the nature of this survey data the perspective of the study is to a large degree that of an individual, decision-making firm, rather than that of an industry or other group of firms as is the usual basis for microeconomic analysis (for the neglected point of view of an individual firm in microeconomic analysis, see Kay 1991).

Generally speaking, the use of survey data in economic analyses has been more common in the labour economics - where the questionnaire approach is used to collect data on individuals' characteristics - than in research in industrial economics. The general aversion of industrial economists to questionnaire approaches probably is due to the difficulty to accept the fact that survey data, rather than "hard" data can be used to examine theories. In particular, individuals' opinions are (taken as) biased views, i.e., they cannot evaluate their own position objectively. On the other hand, one can argue that for examining some economic theories empirically, questionnaire approaches are essential. Waterson (1997) points to a no less important example than the utility maximization principle, which only partially can be tested through "revealed preferences". Through the questionnaire approach it is possible to "capture actions which result in things not happening - entry not taking place or rivals not doing well, for example" (Singh et al. 1998, 231). One can also complement the view of other approaches to the same phenomenon by the questionnaire

approach, as Singh et al. (1998), for example, in their study on the strategic behaviour of incumbent firms do.

The survey data of this study is collected in semi-structured and face-to-face interviews of business managers. As a source of evidence interviews are insightful because they are directly focused on the topic and reveal perceived causal inferences. On the other hand, interviews as a source of evidence has its weaknesses, such as response bias, inaccuracy due to poor recall and reflexivity (See Yin 1994 and Eisenhardt 1989.) This study has paid special attention to the data collection stage to avoid these problems: the business managers were interviewed more than once, the data was corroborated through cross-checking it against data from the earlier interviews and written material obtained from the firms, and the interview material is confidential. Another benefit of the interview method often is a high response rate: given that they were still in operation, 94 percent of the firms interviewed in 1992 were re-interviewed in 1996.

As to the methods of analysis utilized, the data from the same firms has here been analyzed by both econometric and case study methods. The benefit of this turned out to lie in the potential of the two methods, statistical and case study methods, to complement each other. As such, the case study method is ideal for studying research topics where existing theory is inadequate (Chetty 1997). In this case it is possible through a case study to provide information on the causality and interaction between theoretical variables, even discover new

important variables. It is important to note that in a case study there is a need for an analytic strategy to analyse the case study evidence, since otherwise the study can easily become stalled at the analytic stage. These strategies, involving either relying on theoretical propositions or developing a case description, have been defined better only quite recently (see Yin 1994, 102-104). Another key point is that a case study does not seek to generalize the findings to populations or universes, but to expand and generalize theoretical propositions (Chetty 1997, 74). This is also why an analysis of case study data uses a replication logic in the same manner as in the experimental research, rather than a sampling logic (Yin 1994, 36).

The literature utilized in the study comes both from the area of industrial economics and small business studies. In this respect the study has adopted an eclectic approach, i.e., it has surveyed studies in both of the areas to produce testable hypotheses on the behaviour of manufacturing small firms in particular. In this introductory chapter I will not review the literature in detail here because the relevant literature will be reviewed in the context of each of the three chapters below. As to Chapter I, there are two extensive literature reviews available on the studies of internationalization of small firms. These are the articles by Miesenbock, in 1988, and Aaby and Slater a year later. Both of these manifest the fragmentation in this area of empirical literature: no general theory of internationalization of small firms exists. In contrast, the research in product differentiation (Chapter II) has traditionally been dominated by theoretical

studies. A good review of the models of product differentiation is Waterson (1994). As to econometric studies of product differentiation, Sections 1 and 2.3 in Berry et al. (1995) effectively summarize some of the main developments in this area of research. Finally, a survey of the studies of export hysteresis (Chapter III) can be found in the introductory section in Roberts and Tybout (1997).

As it has become clear from the foregoing, the study itself consists of three chapters. In Chapter I, I model small firms' decisions to export using an existing model of the theory of diffusion of innovations as a theoretical tool. The model incorporating so-called epidemic learning and rank effects appreciates the fact that different factors may be important phases of this decision making process. The model suggests that firms learn about export demand initially through contacts with other firms, creditors, middlemen, etc., but that the speed of committing to an export strategy is ultimately determined by firm-specific profits expected from exporting. These, in their turn, are influenced by the firm-specific characteristics such as size and other aspects of resources of firms. In the empirical part of the study, I use a nonlinear econometric model to analyse the speed of export development in the firms. The results from the probit analyses suggest, among other things, that the development of exporting in a small firm is in particular influenced by the language skills of entrepreneurs. In addition, the development of exporting has been more rapid in smaller firms and in firms that have started exporting in the 1990s than in firms which started earlier.

Chapter II focuses on product differentiation. The existing theories of product differentiation seem to be built on considering a group of firms rather than considering an individual firm. For this reason, they cast relatively little light on decision-making processes of firms in the real world. Strikingly, for example, horizontal differentiation by firms observed at the level of an industry may actually result from upgrading of product quality by firms which have specialized in different factors of quality. The main purpose of Chapter II is to provide insights into the differentiation behaviour of industrial small firms in Finland using the case study method of research. I study in a detailed way the motives and means for differentiation, factors making differentiation difficult or unprofitable, success in sustaining competitive advantages based on differentiation, and the impacts of economic integration on product characteristics. The observations suggest that at the individual firm level, vertical differentiation has a special weight since differentiation is often limited by the requirement of technical compatibility, and because improving quality is perceived to incorporate lower risk than differentiation based on taste differences between customers. Success of firms seems to depend mostly on firm-specific factors such as first mover advantages and ability to sustain the differentiation. Thus, a fuller consideration of John Kay's (Kay 1993) argument that firms create added value by distinctive capabilities, which are in general based on characteristics that are difficult to reproduce, could strengthen the theory of product differentiation.

Chapter III explores the process of exit from export markets. Recent studies of entry and exit behaviour of exporting firms, such as Roberts and Tybout (1997), suggest that firms have to incur a sunk cost in an uncertain environment to enter export markets. This tends to cause hysteresis in exporting, i.e., it may be optimal for firms to absorb some operational losses before ceasing exporting if it becomes unprofitable. In this study the export market exit and re-entry behaviour of those 10 firms in the data-set that have made an exit from export markets at some point in their history is analysed using the case-study method of research. The analysis focuses on sources of sunk costs and uncertainty in export operations, and factors that trigger decisions to make an exit from the foreign markets. Experiences and behaviour of the firms are then compared with idiosyncrasies of six firms that have been exporting similar products uninterruptedly since their first entry to export markets. There is little, if any, support for the export hysteresis hypothesis in the data. The export operations of the firms which exited from foreign markets have largely been opportunistic in nature and they have not incurred large sunk costs to enter the markets. Thus, the behaviour of the firms seem to be largely explicable by the standard ('Marshallian') theory, and so does not require a theory more general than this. The lack of an explicit export strategy and the dependence on one export destination made the firms susceptible to problems in the export markets. An implication of the research for studies on export hysteresis is that demand-side factors may be important determinants of the timing of market exits by smaller firms.

On the whole, as far as the generalizability of the results of this study is concerned, it must be noted that the number of observations in the analyses throughout the study is small. This implies that where generalizations are to be made, they either have to appreciate this fact, or hold to the significance of the findings as theoretical propositions. This is also why this study has not primarily aimed at contributing small business policy, but rather has concentrated on more academic issues. In the spirit of this orientation the Concluding Chapter is devoted to the implications of the study for further research.

Chapter I

Modelling Small Firms' Decisions to Export

1. Introduction

In this chapter I model a small firm's decision to export using the theory of diffusion of innovations as a theoretical tool, and test predictions implied by the model by multivariate analysis of data on industrial small firms (4 - 176 employees) in Finland.¹ The theoretical model is based on the epidemic learning and so-called rank effects of the theory of diffusion of innovations, and it describes a hypothetical path of adoptions of the exporting strategy in an industry. In contrast to the earlier applications of the innovation theory to exporting (see, e.g., Simmonds and Smith 1968, Lee and Branch 1978, Reid 1981), a firm's decision to export is here modelled explicitly using inter-firm spread of information on international marketing possibilities and differences in firms' characteristics to determine the preferred time of adopting the exporting strategy. Thus, the present approach maintains the assumption that different types of factors are important in different stages of the exporting decision.

The data used in the empirical analysis has been collected for the specific purpose of this study by interviewing the managing directors of 76 small firms in Finland. Fifty-five of these firms have export experience - yet only half of them export on a regular basis. The findings suggest that inter-firm and person-to-

¹The discussion in this article is confined to exporting behavior only due to the fact that very few of the firms in the data-set have production abroad. For a conceptual framework for foreign direct investments by small and medium-sized enterprises into production abroad, see Steinmann et al. 1980.

person transmission of information are important stimuli to interest in exporting, and that managers' knowledge of languages increases a firm's likelihood of adopting the exporting strategy swiftly after becoming interested in exporting. As far as the hypothesized quickening of internationalization processes over time is concerned, firms that have started exporting later perceive lower fixed costs of establishing exporting operations and have also developed exporting faster than firms which started earlier. These findings lend support to the view presented in this chapter that the rank effects theory can be used in theorizing exporting behaviour of smaller firms and are in line with the hypothesis that economic integration, among other things, accelerates the internationalization processes of firms.

The chapter is organized as follows. The section below critically reviews the traditional approach to exporting in the small business literature. Section 3 surveys the main theoretical ideas in the diffusion of process innovations, and assesses their relevance for modelling exporting behaviour of smaller firms. The synthesis is developed in Section 4, with basic concepts and a firm's decision making described first, and the industry-level model second. Section 5 presents the empirical analysis and observations, and Section 6 the conclusions.

2. A small firm's exporting process

There are several reasons to assume that the attitude of a smaller firm towards international operations is very different from the one of larger firms. The "small" size of the firm is not the only factor that makes a small firm different from larger firms, although it probably is the most important (see Storey 1982, 7). The amount and quality of resources, such as managerial resources, education level of the employees, capital and capacity, are evidently crucial factors in a firm's internationalization (see Reid 1983, 46-48). This point is reinforced by the fact that a firm's ability to find and utilize external resources depends much on its own resources. For external resources there are several different types of sources, from public institutions to informal cooperative networks between firms (see, e.g., Reid 1984, Christensen et al. 1990, Lautanen and Eskelinen 1994).²

Another important consequence of smallness is that the firm is responsive to unique and random factors. An indication of this is that differences in managerial capability and orientation are important factors in explaining the exporting behaviour of smaller firms (e.g., Reid 1983, 50). There is also evidence (see Miesenbock 1988, 45) that suggests that the initial stimulus for exporting in a

²See also Lautanen (1998) which concerns the utilization of the English version of the MTI Sector Info-media in the internationalization of manufacturing small firms. In this case, however, the benefits of the information in English that concerns mainly the firms' domestic markets was assessed unsurprisingly rather nonexistent by the interviewed small business managers.

small firm lie outside the firm (such as getting an unsolicited order from abroad) than inside the firm (such as an excess capacity).

2.1. Conceptual approaches to exporting

Theoretical approaches to small business exporting are few and far between. Instead, the literature is based on empirical studies the results of which are extremely fragmented. As very recently Leonidou and Katsikeas (1996) have put it: “the extant empirical knowledge on export development models”... “is currently characterized by fragmented, uncoordinated and spasmodic efforts to synthesize a general theory”... (p. 519).³ What they conclude from the state of the research is that the status of the existing theory should be enhanced by contributions from marketing, business and other disciplines, such as economics and psychology. Below, I review two early conceptual frameworks of reference on the internationalization process of a small firm that bear relevance to the model presented later in the chapter.

The traditional way to organize analytically the behaviour of smaller firms is to describe it as a slow learning process where the firm gradually increases its

³ See also the literature reviews by Miesenbock (1988) which includes nearly 200 references to empirical studies, and Aaby and Slater (1989) which includes references to 56 empirical studies. Miesenbock’s (1988) conclusion was that “... the literature based on empirical studies is full of inconsistencies and a conclusive theory of small business internationalization is far from being available”. See also Westhead (1994).

commitment to international operations. Perhaps the best-known manifestation of this idea is the so-called stages "model" of internationalization which dates back to the late 1970s (see Bilkey and Tesar 1977). According to this descriptive framework the firm increases stage by stage its international commitment, starting from being initially uninterested in exporting, then filling possible unsolicited export orders and exporting to psychologically close countries, and ending in committed involvement in international marketing (Figure 1). The central suggestion of this framework is that small firms slowly increase their commitment to international operations. The incremental, cautious nature of the process follows from greater perceived uncertainty and risk associated with international business decisions compared to home-market operations (Cavusgil 1984, 54).⁴

Figure I.1. A stages "model" of internationalization (Bilkey and Tesar 1977, 93)

Stage 1	Management is not interested in exporting; would not even fill an unsolicited export order
Stage 2	Management would fill an unsolicited export order, but makes no effort to explore the feasibility of exporting

⁴The internationalization process of firms has also been described as a process resulting from an interplay between the development of firm's knowledge about international markets and operations on one hand and an increasing commitment of resources to these markets on the other. This so-called "Process model of internationalization" (See, e.g., Johanson and Vahlne 1990) is not specifically aimed at describing small firms internationalization, but it also suggests that the internationalization process is a slow and incremental learning process. Recent empirical support and challenges to this model are discussed in Zaby (1996).

Stage 3	Management actively explores the feasibility of exporting (can be skipped if unsolicited export orders are received)
Stage 4	The firm exports on an experimental basis to a psychologically close country
Stage 5	The firm is an experienced exporter to that country and adjusts exports optimally to changing exchange rates, tariffs, etc.
Stage 6	Management explores the feasibility of exporting to additional countries that, psychologically, are further away, ... etc.

Although depicting exporting as a process has gained considerable empirical support (see Miesenbock 1988, 44) it has been criticised on both empirical and theoretical grounds. The stages framework has been argued to be too universal and lack contextual factors, mixing descriptive and normative elements in the model (Christensen and Lindmark 1993, 138-139). Also, it ignores market characteristics and firm resources, does not appreciate the situational specificity in export decision-making, and lacks the ability to explain strategic dimensions of internationalization (Reid 1983, 44-45). In addition, firms seem to develop international operations in a more rapid and direct way than the framework suggests because, among other things, economic integration has lowered obstacles to international marketing (Young 1987, 34, Christensen 1991).⁵

Overall, clearly, a conceptualization of the internationalization process in the

⁵For a discussion on the various mechanisms through which the economic integration may quicken the internationalization process of firms, see Lautanen 1996.

stages framework “represents a clear departure from classical economic theory” (Cavusgil 1980, 279).⁶

The internationalization process has also been viewed as an intra-firm innovation-adoption process. Reid (1981) describes the export expansion process of a firm as an innovation-adoption process consisting of five stages. These are export awareness, export intention, trial, evaluation, and acceptance, with the final stage as the adoption of exporting stage (Figure 2).

Figure I.2. Export behaviour as an adoption of innovation process (Reid 1981, 103)

Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
Export awareness	Export intention	Export trial	Export evaluation	Export acceptance
Problem or opportunity recognition, arousal of need	Motivation, attitude, beliefs, and expectancy about export contribution	Personal experience from limited exporting	Results from engaging exporting	Adoption/rejection of exporting

⁶The justification for the departure from classical economic theory is given by arguing, for example, that “...the internationalization process does not appear to be a sequence of deliberate, planned steps, beginning with a clearly defined problem and proceeding through a rational analysis of behavioural alternatives. Personal characteristics of the decision-makers lack of information, perception of risk and presence of uncertainty seem to be especially valuable in understanding firms' involvement in international marketing.” (Cavusgil 1980, 279).

The idea of linking innovation theory and exporting is, however, older than this. Already by the late 1960s Simmonds and Smith (1968), as well as later Lee and Branch (1978) and Cavusgil (1980, 274) had all suggested that the initial involvement stage in international marketing could be regarded as an innovation in the firm. A common feature of these approaches is, however, that they all consider the innovative process within a firm. This is based on the view that exporting is in one sense different from innovation diffusion: A firm considering exporting "is not one of the first to adopt a recently developed practice", but "when the perspective is narrowed to the firm itself the first export order can be considered an innovation within the closed environment of the firm" (Simmonds and Smith 1968, 94).

2.2. Preliminary conclusions

Firstly, the above descriptive frameworks of reference, like the stages framework, do not explicitly model the decision-making of a firm. The above review also suggests that the internationalization process for a small firm may not follow today the stages proposed in the framework, but that it may have become a more straightforward process due to, for example, economic integration and general improvement in the information on the international business operations. Yet, it must be appreciated that idiosyncracies of small firms

such as lack of resources and concentrated decision-making may be important sources of variation in the exporting behaviour of smaller firms. Secondly, it seems plausible to assume that costs of exporting, such as costs from product adaptation, market research, advertising and marketing or possible sales organization abroad, may be significant in comparison to sales if the firm itself is small. Given this, the notion of cautiousness of the internationalization process in the frameworks presented above can be, in economic terms, due to the fact that the costs of committing into international marketing are partly sunk (see Roberts and Tybout 1997) and the export investment decisions may be made in an uncertain environment. These two factors ultimately determine how risky a commitment to international marketing is.

3. Theories of innovation diffusion and exporting

In essence the study of diffusion of innovations aims to rationalize why, if a new technology (or a product) is superior, it is not adopted immediately by all potential user firms (consumers). Theoretical models often concentrate on the demand side alone (Stoneman 1983, 65.) These models are of four main types (Karshenas and Stoneman 1993, 505) that can be called epidemic and learning, rank, stock, and order effect models. The three latter ones are essentially inter-firm diffusion (imitation) approaches, i.e., they consider spread of innovations among firms of an industry. Epidemic learning models can be applied both to

inter- and intra-firm diffusion analyses (for an example, see Mansfield 1989).

Models based on learning and epidemic type forces are the traditional approach, and derive their impetus - and mathematical tools - from the analysis of the spread of diseases in biology (Davies 1979, 9). The general idea in epidemic diffusion is that, given that the new technology is profitable to adopt, a potential adopter firm actually adopts the technology after it has received information on its existence. However, the new technology is not immediately adopted by all potential firms because they feel uncertainty about its characteristics.

Consequently, the time path of adoption reflects learning by potential users (Stoneman 1987, 51). The learning effects are at least partly endogenous and often characterized by a logistic function, resulting in a S-shaped learning curve⁷.

The central characteristic of rank, stock, and order models is that they consider explicitly the adoption decision by the firm and generate rules under which different firms will have different expected returns from the use of the new technology and thus differing preferred dates for the adoption of it (Karshenas

⁷The logistic learning curve can be derived from the most simple epidemic model that is represented by the equation $m_{t+1} - m_t = b(n - m_t)m_t/n$, $b > 0$, where m_t is the number of infected individuals and n is the total fixed population. The equation states that the number of individuals contracting the disease during a period is proportionate to the number of uninfected multiplied by the proportion already infected (b indicates effectiveness of the learning mechanism and is assumed to be constant and equal across all uninfected individuals). If the period t to $t+1$ is short, the equation can be written as a differential equation $dm_t/dt(n - m_t) = bm_t/n$, the solution of which, $m_t/n = \{1 + \exp(-a - bt)\}^{-1}$, is the logistic time curve (see Davies 1979, 9-10).

and Stoneman 1993, 504). The decision to adopt can be viewed as depending exclusively on the (expected) profitability of adoption such that a marginal adopter actually adopts the new technology when the cost of adoption falls under the profit expected from adopting it. Therefore, to generate an adoption path, rank, stock and order models generally assume that the cost of adoption decreases as the technology becomes increasingly common.

The rank models (see, e.g., Davies 1979, 20-22) are based on the assumption that the differences in the expected profits result from differing characteristics of potential adopters (such as firm size). In other words, because firms differ, they have differing reservation prices for acquisition of the technology (Stoneman 1987, 52), and those firms having high expected returns adopt first, and firms with low expected profits adopt late. In the stock effect models (also called the game-theoretic approach) the benefit from adopting a new technology changes as the number of earlier adoptions increases. This is because adoptions are assumed to lead to increases in firms' outputs and through this in the industry output. Consequently, earlier adoptions influence the profitability of future adoptions (Stoneman 1987, 52). The order effect idea is rather similar. Here the firm's position in the adoption order determines the benefit to the marginal adopter (because of first mover advantages), so that it is more profitable to adopt early than late (Karshenas and Stoneman 1993, 504-505)

As to the exporting decision of smaller firms, I find that an analogy between the

adoption of innovations and exporting can be utilized in research on small firm exporting. In addition to the contributions by Reid (1981), Simmonds and Smith (1968) and Lee and Branch (1978), which were referred to in Section 2, the analogy may be supported by the following facts about adoption of innovations presented by Karshenas and Stoneman (1993, 509). Firstly, the process of adopting a technology has uncertainty and information as an key element. Secondly, it involves learning behaviour. Thirdly, a process of adopting a new technology is often initiated through human contact, and has the firm's decision-maker as the most important person influencing the process. Whilst many economic problems may share these elements, they seem to match very well the nature of the small firm's internationalization process discussed in Section 2.

Because the spreading of information and external factors play a major role in firms' becoming interested in exporting, the idea of epidemic learning effects seems a suitable framework for theorizing the export behaviour of small firms⁸.

On the other hand, the literature on small business exporting has been successful in explaining entry to exporting by the characteristics of firms, such as firm size or the quality of a firm's resources (see, e.g., the literature reviews by Aaby and Slater 1989 and Miesenbock 1988). Thus, it seems reasonable to assume that there exists an unequal benefit distribution from exporting that is generated by

⁸In addition, extensions of the epidemic learning idea could possibly be used to describe a process where firms export experimentally in order to acquire more information (for a corresponding model of technology adoption, see Tonks 1986).

differences in firm-specific characteristics. This fact clearly lends a priori support to the rank effects theory. On the contrary, there are general features in the order and stock effect models which suggest that their applicability to the exporting behaviour of small firms might be more restricted. An important such feature is that these theories rely on interaction between the firms adopting the new technology, whereas in the case of the small firm exporting firms are likely to enter in competitive export markets (and thus not competing essentially with other domestic firms in the export markets). Given these considerations, I decided to use a model incorporating epidemic learning and rank effects to depict the exporting behaviour of smaller firms.

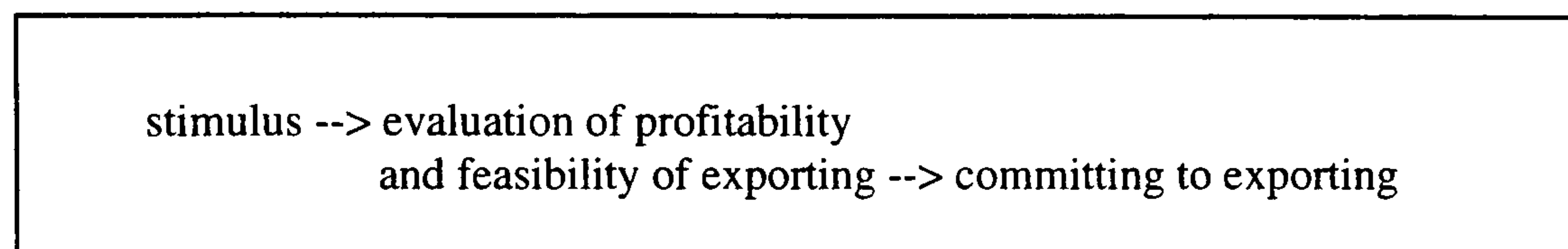
4. Synthesis: A model based on epidemic learning and differences between potential exporting firms

4.1. Basic concepts

The four principal concepts of the present framework of analysis are an initial *stimulus* for exporting, (expected) *profitability* and *feasibility* of exporting, and the actual *commitment* to the exporting strategy (Figure 3). I have separated the initial stimulus for exporting from the actual commitment decision of a firm because it seems likely that different types of factors are important in these two stages of the decision to export. In particular, becoming interested in exporting

through a stimulus seems likely to involve information spreading (epidemic type forces)⁹, whereas the commitment decision after a period of experimental exporting seems likely to be dominated by the profitability of exporting (rank effect type forces).

Figure I.3. Export commitment decision



In the model, a stimulus for exporting is a necessary, yet not sufficient, prerequisite for the actual commitment to the exporting strategy. Subsequent to the stimulus the firm becomes a potential exporter. Now the firm is interested in exporting and evaluates the expected profitability and feasibility (i.e. adequacy of its resources) of exporting through experimental export deliveries¹⁰. It should be

⁹For empirical support to this assumption, see Lee and Branch 1978. They found that the initiating force for exporting is often either precise knowledge of the existence of a market opportunity or gaining technical knowledge of exporting. The information may be passively received from, for example, other firms, governmental agencies, banks, middleman, or potential buyers in foreign countries.

¹⁰Reid (1983) has suggested that the profitability of exporting is likely to be evaluated on the basis of transaction costs. Thus it is primarily influenced by heterogeneity of customers, how these customers are spatially distributed and the

noticed that feasibility is separable from profitability only if the feasibility of exporting depends on experimental knowledge that cannot be purchased in any form, which is unlikely after the starting phase of exporting (see Johanson and Vahlne 1990, 15). Once the exporting is expected to be profitable and feasible, the firm actually commits itself to exporting strategy, and exporting becomes an established and regular part of the firm's operations (Figure 3)¹¹.

Firms in the model are assumed to be rational profit maximizers. Yet they may want to postpone committing to exporting beyond the moment the profitability and feasibility, *prima facie*, break even. Waiting can have value especially if the firm (that holds rational expectations), experiences firm-specific uncertainty about the commitment to exporting, for example, because of some random component in the entrepreneur's skills or learning, or perceived uncertainty related to the future exchange rate. Under these circumstances, if the expected adoption of exporting involves a sunk cost, such as a marketing campaign to settle the firm's position in the foreign markets, the firm may do better by postponing its decision (see Dixit 1993, 5-6). This is because by waiting it can avoid the subnormal return from exporting that would be realized if, for example, the exchange rate became less favourable for the firm, and still actually commit

regularity with which they purchase.

¹¹Defining precisely when a firm becomes an exporter is of course arbitrary. Here the moment of adoption of exporting to a market is defined as the moment when operations in this market become regular, or a normal part of the firm's activities (for the empirical operationalization, see Section 5). This can be seen as the successful development of exporting.

if it did not¹².

4.2. The commitment decision

Next I depict the export commitment decision by an individual small firm in slightly more formal terms. At this stage, the stimulus for exporting is taken as given. The reader should note also that throughout the analysis the tradeable product is given, but that firms are assumed to differ in their other characteristics (such as size and quality of resources).

Suppose that a potential exporter firm i , with characteristic z_i , is evaluating the expected profitability of exporting, seeking to maximize its profits over a planning period. For simplicity, assume that the time is discrete with a per period rate of interest r , and that there are only two time periods, $t = 1, 2$. Further assume that the cost of adoption of exporting at time t , c_t , is a fixed cost and that the firm has perfect foresight to adoption costs and to its resources in period 2. If the firm commits itself to exporting in the first period, it obtains an expected benefit $h_1(z_i) = g_1(z_i) + [1/(1+r)]g_2(z_i) - c_1$, where g_1 and g_2 are the expected revenues from exporting to the foreign market for the two periods respectively. If the firm adopts in the second period it gains $h_2(z_i) = g_2(z_i) - c_2$. Denoting the

¹²Naturally, waiting involves a cost which the firm is here expected to allow for in its decision-making.

firm's resource situation in time t with respect to exporting to the destination country or countries by $v_t(z_i)$, and v_{ii}^m the minimum of resources that can (are expected to) sustain exporting to the particular country for the two periods, I now can write the conditions for committing to exporting in period 1 as:

$$(1) \quad h_1(z_i) = g_1(z_i) + [1/(1+r)]g_2(z_i) - c_1 > 0, h_1'(z) > 0$$

$$(2) \quad a_1(z_i) = [1/(1+r)]h_2(z_i) - h_1(z_i) < 0$$

$$(3) \quad w_1(z_i) = v_1(z_i) - v_{ii}^m \geq 0, w_1'(z) > 0$$

where a_1 is the arbitrage profit from postponing the adoption until the next period and w_1 represents slack in the firm's resources (for simplicity, I will leave out the function arguments hereafter). The profitability condition of adoption consists of two parts represented by the equations (1) and (2), and the feasibility of one (3).

As to profitability condition, assuming that exporting does not affect the firm's domestic operations, the firm adopts exporting at time $t = 1$ if it is expected to yield positive profits (equation 1), but only if it does not find it profitable to wait until the second period (equation 2). Following the diffusion literature, I call these two components the profitability condition and the arbitrage condition. Note that if $g_2 < c_2$, it is not possible for the firm to benefit from delaying the commitment decision, whereas if $g_2 > c_2$, the arbitrage condition will be dominant.

On the other hand, the firm can commit itself to exporting only if it has sufficient

knowledge and resources for the planned exporting strategy. This condition is represented by the equation (3): there has to be a non-negative slack, w_1 , in the firm's resources before it can make the required commitment. Note that this slack is, as well as profitability of exporting, assumed to be an increasing function of z . Given that the firms are rational profit maximisers, it follows that a potential exporting firm commits itself to exporting in the first period if the conditions implied by the equations (1) - (3) become satisfied. If the firm does not commit itself at the first period, the conditions for committing to exporting in period 2 are simply $h_2 > 0$ and $w_2 \geq 0$.

4.3. Epidemic learning, rank effects and the adoption path

Now, to allow for the importance of external stimuli in firms for exporting, the initial stage of becoming interested in the possibility of exporting will be assumed to be dependent on the epidemic type of information spreading. The model is based on a technology diffusion model in Stoneman (1987, 68-69)¹³. I will apply the demand side of the model to my framework of exporting.

Suppose again that there are only two time periods, $t = 1$ and $t = 2$, with r as the discount rate. Let the total number of firms producing or selling the tradeable

¹³The model is based initially on Stoneman and David (1986).

good in the industry be N . In period t P_t of these firms are potential exporters and E_t exporters. Denote $P_t + E_t = S_t$, and the corresponding proportions of these three groups of firms of N by lower case letters p_t , e_t and s_t . Now suppose that the proportion of firms that have learnt about exporting in time t , s_t , is given in the first period, and determined for the second period through a simple epidemic learning process:

$$\begin{aligned}
 (4) \quad s_2 &= G(P_1, E_1, N) \\
 &= q + p_1 + e_1 + b(1 - p_1 - e_1)(e_1), \\
 &= q + s_1 + b(1 - s_1)(e_1), \\
 G'_1 &> 0, G'_2 > 0, G'_3 < 0, \quad 0 \leq s_1, \quad 0 < s_2,
 \end{aligned}$$

where q represents exogenous learning between the two periods and b the effectiveness of the learning mechanism in the spread of the information. Hence, the proportion of firms that have learned about exporting by period 2 is assumed to be determined as a sum of three effects: firstly, the proportion of "old" potential and committed exporters of the given product; secondly, new exogenously stimulated firms; and thirdly, an effect that is proportionate to the product of the proportion of firms not yet interested in exporting and the proportion of exporting firms¹⁴. This learning mechanism is consistent with the

¹⁴Foreign firms which export the product into this country are also potential sources of stimuli to exporting for domestic firms. In this model, this type of stimuli are included in q .

view that stimuli for exporting are often external in smaller firms, but that they can be assumed to be more frequent in more internationalized industries. Notice that (4) implies also that firms that export in period 1 are exporting in period 2 as well, i.e., adoption of exporting is an irreversible decision in this model. In contrast, as the study in the third Chapter of this thesis strikingly shows, in the real world a decision to export is not irreversible. However, the results of the analysis in Chapter III support the view that the likelihood of exit from export markets is greatest at the reactive stage of exporting (i.e. before adopting the export strategy), suggesting that the violation of the assumption of irreversibility in the model is to some extent smaller than at it looks at the first sight.

The N firms differ across the characteristic z , that is assumed to be independent of the exporting and continuously distributed according to $f(z)$ with cumulative distribution $F(z)$. Let the benefit in time t for a firm with resources z from committing itself to exporting in time t be denoted by $g_t(z)$, and assume $g'_t(z) > 0$. Further assume that $g_1(z)$ and $g_2(z)$ have perfect rank correlation. As mentioned, the slack in resources also increases with z , i.e., $w'_t(z) > 0$. For simplicity it is assumed that the feasibility of exporting does not depend any more at this stage on a lack of experimental type of knowledge. This means that the potential exporters could acquire the rest of the needed resources from markets, other firms or public organizations (with a cost included in c_{it} in (1)) if the profitability condition was satisfied before the feasibility condition. Consequently, assuming perfect foresight and that $g_2 > c_2$ to keep the model simple, the arbitrage

condition will dominate in the commitment decision, and it will be sufficient to consider the adoption process on the basis of this condition.

Under these circumstances, in each period there are (possibly) a number of potential exporters for whom it is profitable and feasible to commit to exporting, while for the others it is not. The number of firms committed to an exporting strategy in period t is given by:

$$(5) \quad E_t = s_t N \int_{z_t^*}^{\infty} f(z) dz = s_t [N - NF(z_t^*)], \quad t = 1, 2,$$

where z_t^* is the strength of resources of the last firm which finds it profitable to commit itself to exporting in time t , i.e., z for the marginal exporter in time t . By simple calculation:

$$(6) \quad z_t^* = F^{-1}[(1 - E_t/S_t)], \quad t = 1, 2.$$

The marginal exporters in periods 1 and 2 will be determined in accordance with the arbitrage condition such that:

$$(7) \quad g_1(z_1^*) = c_1 - [1/(1+r)]c_2$$

$$(8) \quad g_2(z_2^*) = c_2,$$

i.e. that the benefits from committing to exporting equal the costs from such a commitment in each period.

Basically, given c_1 and c_2 , exporting would extend among N to the point where the marginal exporter received a benefit equal to the cost of committing to exporting. However, as only the given proportion s_1 of the total number of firms in the industry are interested in exporting in period 1, only this proportion (s_1) of firms for which regular exporting would be profitable, will actually be committed exporters in this period (equation 5). The number of exporters in period 1 then affects through (4) the proportion of firms interested in exporting in period 2, and, again, given c_2 , only this proportion of all those firms in N for which exporting would be profitable actually are exporting firms in period 2.

Entrepreneurs not interested in exporting do not observe the profitability (and feasibility) of exporting for their enterprise. On the other hand, if there were no differences in resources between the small firms, all $s_1 N$ in the first period, and $s_2 N$ firms in the second period, would have regular exporting.

To complete the model, the time path of commitments and the role of economic integration has to be discussed. The time path of export adoptions results from assuming that profitability and feasibility of the adoption of exporting are improving exogenously over time, i.e., that $c_1 > c_2$ so that $g_2(z^*_1) > c_2$ implying $E_2 > E_1$. In other words, given the differences in the characteristics between firms interested in exporting, committing to an exporting strategy becomes profitable

for more and more enterprises. The economic rationale for this assumption is based on economic integration and general betterment in the quality and supply of information on foreign market operations. By lowering tariff and non-tariff barriers to trade and making market conditions more homogenous in different countries, economic integration lowers costs of, for example, transportation, product adaptation, or mobilizing resources for exporting. If the integration incorporates monetary cooperation among the relevant destination and competitor countries, the risk related to exchange rate changes in export decisions should also diminish. In addition, feasibility of exporting will be improved *per se* because in the more homogenous markets less experimental knowledge is needed, and because of the improvement in information supply. Note that this not only suggests that the number of exporting firms increases over time but also that adoption processes that have started later will be more rapid than early ones.

5. Empirical analysis

5.1. The data on smaller firms in Finland

The data set used in this analysis is based on detailed structured interviews of the managing directors of 76 industrial small and medium-sized enterprises (number

of employees between 4 and 176) in Finland in 1996.¹⁵ The firms operate in wood-processing and engineering sectors, which are traditional exporting industries in the economy of Finland, and for which the Western European markets are crucially important.¹⁶

Table 1 presents basic information on the data. Of the 76 firms interviewed 21 (28 %) operate in three wood-processing sectors and 55 (72 %) in five engineering sectors¹⁷. As to firm size, the bulk of the firms are comparatively small: on average the firms employ 35 persons (median 22 employees) and run a yearly turnover of about FIM 23 million (i.e. £ 3.3 million). In terms of the number of enterprises, this sample represents about 4 per cent of the total population of firms employing from 10 to 200 persons in wood-processing and

¹⁵The virtue of the data set follows from the use of the interview method to collect the data: the level of response was high (> 90 %) and it could be ensured in the interviews that the questions were correctly understood and deliberately answered. In addition, the face-to-face interviews made it possible to acquire rich information on the businesses and their operations not covered in the structured questionnaire. On the other hand, because of the relatively small number of firms in the database, the possibilities of using sophisticated econometric methods successfully are naturally limited. For the 1996 questionnaire, see Appendix 1.

¹⁶Trade in these sectors between the EU and Finland has been free of tariff barriers since 1978, i.e., since the free trade agreement with the EEC in 1973 became fully operative. Yet even before that the openness of the economy was advanced by an associate membership in EFTA. More recently, in 1994 Finland joined in the European Economic area, and it became a full member of the European Union in the beginning of 1995. The essence of the latter developments has been that they lower physical, technical and fiscal barriers to the movement of goods, services, capital and labour between Finland and its key markets (VATT 1992, 6, 35).

¹⁷The two firms in manufacture of paper products (341) have been aggregated to wood-processing firms.

engineering sectors in Finland¹⁸.

Table I.1. Basic information on the data.

SIC-3 sector	Number of firms in the data- base	Average number of employees 1995	Average share of own products of the turnover 1995	Number of exporting firms 1995	Average share of exports of the turnover, exporting firms 1995
331	13	46	84	10	50
332	6	27	92	6	29
341	2	39	87	2	45
381	23	27	45	14	27
382	15	33	31	5	31
383	9	53	47	6	30
384	6	34	91	5	27
385	2	12	79	2	46
Total	76	35	33	50	34

Remark: Standard industrial classification (SIC) 1979: (331) manufacture of wood and wood and cork products, except furniture, (332) manufacture of furniture and fixtures, except primarily of metal, (341) manufacture of paper and paper products, (381) manufacture of fabricated metal products, except machinery and equipments, (382) manufacture of machinery except electrical, (383) manufacture of electrical machinery, apparatus, appliances and supplies, (384) manufacture of transport equipment, (385) manufacture of professional and scientific, and measuring and controlling equipment n.e.c. and of photographic and optical goods. (Central Statistical Office of Finland, Handbook no. 4, rev.)

¹⁸Source: Central Statistical Office of Finland, Register of Enterprises 1994.

Eighteen (86 %) of the wood-processing firms and 32 (59 %) of the engineering firms in the data set had direct exports of goods in 1995¹⁹. Only 38 (76 %) of these, however, perceived their exporting as regular. For all exporters, the average share of exports in the yearly turnover was 34 per cent in 1995 (median 30 %). In addition to these 50 exporting firms, five enterprises had tried exporting at some stage earlier. Thus, taken all together, as many as 55 enterprises in the data set have export experience. The two most important export destinations for the firms in the present sample were Sweden and Germany in 1996.

5.2. The hypotheses

This empirical analysis focuses on the spread of export information, costs of exporting, and characteristics of marginal adopters of the exporting strategy, which are the three key elements in the theoretical model presented above. The key proposition of the model is that firm-specific characteristics such as the size of a firm, quality of its resources or perceived risk related to the exporting will determine the expected revenues from exporting, and thus influence the speed of the adoption process for each individual firm interested in exporting.²⁰ In particu

¹⁹The difference in the share of exporting firms between the two aggregate sectors is statistically significant at the 5 per cent level (χ^2 -test).

²⁰Note that because exporting is by no means a recently invented practice, the points of time firms actually have started exporting do not represent the order of adoptions

lar, larger firms, firms abundant in highly educated personnel with good knowledge of foreign languages, and firms perceiving low risk in exporting are expected to have adopted the exporting strategy in a shorter time than firms with the opposite characteristics. Secondly, inter-firm and person-to-person transmission of information should be important sources of initial stimuli for exporting. Thirdly, the improvement of profitability and feasibility of exporting over time should be reflected in lower costs of exporting and the speeding-up of the adoption processes because of, among other things, the process of economic integration of Finland into Western Europe. In the following, I briefly comment on findings on the stimuli for exporting and costs of exporting, and then report the analysis of the rapidity of development of exporting.

5.3. Spread of stimuli for exporting

In the interviews the managing directors were asked to name the three most important factors that initially got their firm interested in exporting. The four most frequent most important initial stimuli for exporting in these 55 firms were getting an unsolicited order from abroad (24 %), starting exporting as a part of an intrinsic growth objective of the firm (24 %), getting the idea through a personal

among the given population of firms. Consequently, the analysis focuses on the speed of the adoption processes, controlling simultaneously for the time at which the exporting was initiated.

contact outside the firm (16 %) and an initiative by another domestic enterprise (13 %)(Table 2). More than three quarters of the total number of exporting starts in the present sample are covered by these four stimuli.²¹

Table I.2. The most important initial stimulus for exporting (column per cent)

Stimulus:	Wood- processing (n=17)	Engineering (n= 38)	Total (n=55)
1 Got an unsolicited order from abroad	24	24	24
2 Observed other firms exporting the similar products	12	5	7
3 Own import operations	0	0	0
4 The idea came from another domestic enterprise	0	18	13
5 The idea came through a personal contact	35	8	16
6 The idea came from a bank or a middleman	0	0	0
7 The idea came from public export stimulation programme	0	0	0
8 Excess capacity	0	0	0
9 Domestic recession	12	5	7
10 Intensified local or domestic competition	0	3	2
11 Growth objective of the firm	12	29	24
12 Taking advantage on potential economies of scale	0	0	0
13 Other stimulus	5	8	7

²¹This result slightly deviates from findings in earlier studies (see Miesenbock 1988, 45). In particular, in the present sample, excess capacity has not played any major role as a factor pushing firms to exporting, whereas a quite common stimulus appear to have been the growth objective of the firm.

Of the most important stimuli, the three stimuli related to inter-firm and inter-person contacts outside the firms (i.e., unsolicited orders, or personal or inter-firm contacts to other domestic firms) cover 53 per cent of the export starts.

Although these results are not enough to confirm the hypothesis (that inter-firm and person-to-person transmission of information are important sources of initial stimuli for exporting) they are in line with this hypothesis.

5.4. Costs of exporting

Table 3 summarizes the evaluations by the managers of the meaning of different types of (fixed) costs from establishing exporting in their firm. According to these assessments, the three most important types of export establishment costs are outlays for travelling, promotion and advertising abroad, and product development.

Table I.3. Significance of different types of costs incurred to establish exporting in the operation of firms, and the extent to which these are sunk costs, by sectors (averages of the managers' assessments given on scale: 1 not important to 5 very important)

	Wood- processing	Engineering	Total
a) Employment of new staff devoted to exports	2.7	2.4	2.5
b) Investments to technology or capacity of production	2.4	1.8	2.0
c) Product development	2.5	2.7	2.6
d) Market research	1.9	2.5	2.3
e) Export market promotion based at home country (promotion and advertising abroad)	2.6	3.1	2.9
f) Direct investments abroad in production, sales or promotion offices or subsidiaries	1.4	1.8	1.7
g) Travelling	3.3	3.3	3.3
h) Other, please specify	1.4	1.2	1.2
Average a)-h) (COST_AVE)	2.3	2.3	2.3
Extent to which possible to benefit from these investments in the domestic markets (sunk costs)	1.9	2.0	2.0

A linear regression model (OLS) was used to test whether the costs of establishing the exporting strategy have become lower over time because of economic integration as the rank effects model suggests. The variables of the estimated model are defined in Table 4. The dependent variable, COST_AVE, is the average of the entrepreneurs' assessments on the importance of 8 different

costs from developing exporting operations. On the right hand side, the integration process of Finland into the European Union has been divided into three era, with the latter two of these represented by dummy variables in the estimated equation. These two stages are the period from 1979 (the free-trade agreement with the EEC in effect; variable ERA_EEC) till 1993, and the time since the beginning of 1994 (i.e. from the establishment of the EEA; ERA_EEA). In addition, two control variables were included in the equation: E_SHARE representing the share of exports of the firm's turnover, and SECTOR, representing the aggregate sector of the firm.

Table I.4. Definitions of the variables in the analysis of (fixed) costs of exporting.

Left hand side variable: COST_AVE: the mean of managers' evaluations (1, 2,..., 5) of the meaning of 8 different types of (fixed) exporting costs in order to establish the exporting.

ERA_EEC	A dummy variable representing the time when the firm has started exporting: 1979-1993
ERA_EEA	A dummy variable representing the time when the firm has started exporting: 1994-
E_SHARE	Share of exports of the total turnover in <u>1995</u>
SECTOR	Dummy variable representing the aggregate sector (wood-processing = 1)

The results (Table 5) suggest that both of the integration agreements have

lowered the likelihood of a firm being a "high cost" export establisher, yet only the change in 1978 (ERA_EEC) is strictly statistically significant at the 5 per cent level (the significance value for the ERA_EEA dummy is 0.067).²² Thus the result is in line with the view that the costs of exporting have become lower due to economic integration. By this means it is also in line with rank effects theory. Yet the result does not support the view that the costs of establishment of exporting would be likely to be affected by non-tariff barriers more than tariff barriers to trade.

Table I.5. Estimation results from a linear regression model (OLS)²³ of costs of exporting

Variable	Coefficient (s.e.)	Mean of X
COST_AVE		

Constant	2.489 (0.245)**	
ERA_EEC	-0.641 (0.213)**	0.512
ERA_EEA	-0.594 (0.314)	0.146
E_SHARE	0.011 (0.004)**	36.88
SECTOR	-0.388 (0.204)	0.342
Number of observations	41	
F-statistic	7.18	
Degrees of freedom	4	
Significance level	0.000	
R square	0.44	

²²In the analysis I assume that firms have incurred costs from establishing exporting during the era they have started exporting. In the reported model the effects of economic integration are controlled for the share of exports of the turnover and for sectoral effects. Firm size (turnover) was found insignificant control which confirms that evaluations are relative with respect to firm size.

²³This is really a truncated regression as the dependent variable is continuous in the interval [1,5] rather than [- infinity, infinity]. OLS is used because there is little difference in practice.

5.5. Rapidity of committing to exporting

The way of deciding the moment at which the adoption of the exporting strategy becomes operational is naturally one of the key questions in the present analysis. In this study I consider a firm to have adopted the exporting strategy when it has been exporting at least 10 per cent of its total turnover for two consecutive years.²³ Hence, this empirical analysis does not consider a commitment to exporting as an organizational change in the firm, but more as successful development of exporting up to the carefully chosen point. Another major assumption I make in the theoretical model is the dominance of profitability over feasibility at the time of the commitment decision. As we will see below, according to entrepreneur's perceptions, the need for experimental knowledge²⁵ is not related to the speed of the adoption process in any statistically significant way. Given this, I see no reason to reject the assumption that committing to exporting after a period of experimental exporting is no longer critically restricted by the need for experimental knowledge.

²³ This seems to be the best estimate when looking at the contemporary shares of exports in firms the managers of which do and do not perceive their exporting as "regular": in only 8 per cent of the regularly exporting firms is the share of exports less than the 10 per cent, and in only 7 per cent of the irregularly exporting firms more than this cut-point. If a 20 per cent cut-point had been used, 27 per cent of the regularly exporting firms would have been "misclassified". In case of a 5 per cent cut-point, the proportions of "misclassified" firms would have been 5 per cent of the regular exporters and 73 per cent of the irregular exporters.

²⁵ By experimental knowledge is meant firm-specific knowledge on exporting operations that cannot be purchased in any form, i.e., it can be learned only by doing. Johanson and Vahlne (see, e.g., 1990) have argued that a need for this kind of information is a factor restricting a firm's internationalization.

The hypothesis concerning the adoption process is that the characteristics of firms influence the speed of adoption of exporting in a firm. Thus the null-hypothesis is that the speed of committing to exporting in a firm is unrelated to firm-specific characteristics but influenced by factors such as sector, time of starting exporting or (the level of) exchange rate. A probit model, where the firms were divided into quick adopters (length of adoption process from a stimulus for exporting to the establishment of exporting less than the median value, 4 years) and slow adopters (adoption time greater or equal than four years), was used to test the hypothesis: $y_i^* = \beta'x_i + \epsilon_i$, $y_i = 1$ if $t_i < 4$ years and $y_i = 0$ if $t_i \geq 4$ years, and $\epsilon_i \sim N(0, 1)$, where t_i refers to the length of the adoption process in years for firm i . In other words, I am interested in finding firm-specific characteristics x_i that affect the likelihood of adopting the exporting strategy quickly: $P[y_i = 1] = P[x_i'\beta + \epsilon_i > 0]$. In the following the dependent variable y_i is given name ADOPT_SPEED.

Table 6 defines the variables in the estimated models. The firm-specific characteristics included in the x_i represent firm size (F_SIZE), features of managerial and staff capability (manager's language skills: LANGUAGE; staff education level: EDUCATION), perceived risk related to exporting (RISK) and need for experimental knowledge in developing exporting (EXP_KNOW). The control variables used are the level of exchange rate (EXCHRATE), time of becoming interested in exporting (STIMULUS80 for 1980s, STIMULUS90 for

1990s) and aggregate sector (SECTOR)²⁴.

Table I.6. Definitions of the right hand side variables in the probit analysis of speed of adoption.

Left hand side variable: **ADOPT_SPEED** is based on the duration of the adoption process of exporting from a stimulus to exporting to the establishment of exporting (made operational as having exported more than 10 % of the total turnover of the firm for at least two consecutive years) t_i ; $ADOPT_SPEED_i = 1$ if $t_i < 4$ years and $ADOPT_SPEED_i = 0$ if $t_i \geq 4$ years which is the median value.

Characteristics variables:

F_SIZE (+)	Firm size: Manager's assessment on the size of the firm in relation to other domestic enterprises in the branch at the time of the establishment of exporting; 5 point integer scale from small to large
LANGUAGE (+)	Language skills: An average of 4 binary variables indicating managers knowledge of English, Swedish, German and French.
EDUCATION (+)	Education level of the staff: proportion of white-collar staff with a university degree of the total white-collar staff
RISK (-)	Perceived risk related to the adoption of exporting strategy: manager's assessment to what extent the costs related to the development of exporting could have been utilized in the domestic markets if the exporting was found unfeasible or unprofitable. Measures risk through the extent to which the costs of exporting are sunk.
EXP_KNOW (-)	Meaning of experimental knowledge in developing exporting; a 5-point integer scale from not important to very important

²⁴International trade theory suggests that a country exports products in which it has a comparative advantage. Thus a variable describing capital/labour ratio at the 3-digit sector level was also tried in the equations as a control variable. The equations, however, turned out to be impossible to estimate using this control variable. On the other hand, it can be argued that this potential sectoral effect is already roughly captured by the Sector dummy.

Control variables:

EXCHRATE	Level of exchange rate at the time the exporting started (FIM/USD)
STIMULUS80	Dummy variable representing the decade adoption process started: the 1980s
STIMULUS90	Dummy variable representing the decade adoption process started: the 1990s
SECTOR	Dummy variable representing the aggregate sector (wood-processing = 1)

The estimation results for two specifications are reported in Table 7: Firstly, a model (A) including all the independent variables listed in Table 6, and secondly, a reduced specification of this model, (B), including those variables which were found statistically significant in the specification (A), with the same set of control variables.

Table I.7. Estimation results from probit regressions with Huber standard errors:

pace of adoption

Specification: Variable ADOPT_SPEED	A Coefficient (s.e.)	B Coefficient (s.e.)	Mean of X
CONSTANT	-1.541 (2.266)	0.526 (1.727)	
F_SIZE	-1.053 (0.357)**	-0.854 (0.295)**	3.029
LANGUAGE	6.540 (2.820)*	5.585 (2.551)*	0.275
EDUCATION	1.363 (1.792)		0.077
RISK	-0.083 (0.361)		1.978
EXP_KNOW	0.413 (0.369)		3.064
EXCHRATE	0.103 (0.312)	-0.059 (0.293)	4.533
STIMULUS80	0.145 (1.032)	-0.278 (0.967)	0.148
STIMULUS90	3.724 (1.098)**	3.008 (0.963)**	0.431
SECTOR	0.424 (0.765)	0.256 (0.735)	0.282
Number of observations	26	28	
Log likelihood function	-8.83	-9.49	
Restricted log likelihood	-17.71	-19.34	
LR	17.77	19.68	
Degrees of freedom	9	6	
Significance level	0.030	0.003	
Pseudo R ²	0.52	0.51	
Correctly predicted obs.	23 (88 %)	24 (86 %)	
LR/LM for testing homoscedasticity assumption in the basic probit regression	-/20.76	8.14/19.96	
LR for testing hypothesis that the 3 variables left out in B do not significantly deviate from zero		1.32 (3 D)	

A likelihood ratio test suggests that the three parameters included in (A) but left out from (B) do not differ from zero, for which reason the latter was used when

computing marginal probabilities of the significant characteristics. Because of a problem of heteroscedasticity, I have used probit regression with Huber standard errors (i.e. White's method) instead of the basic probit estimation procedure.²⁵

The significant coefficients were found to be robust across different specifications of the model. They indicate that, firstly, the larger the firm with respect to other domestic firms in the industry at the time of the adoption, the *smaller* is its probability of adopting exporting within 4 years from becoming interested in exporting²⁶. Secondly, those firms the managers of which have knowledge of more foreign languages, have a higher likelihood of adopting exporting strategy quickly than firms run by managers with weaker language skills. The highly significant control variable indicates that firms which have

²⁵Homoscedasticity assumption is an important assumption in a probit regression, where, in practice, one estimates β/δ instead of β . If the error term does not have constant variance, estimation produces inconsistent estimates of standard errors and also biased parameter estimates (see, e.g., Davidson and McKinnon 1984). Because estimation of more general models with full sets of heteroscedasticity correction terms was found impossible, undoubtedly due to small number of observations, the Huber standard errors procedure was used instead. This procedure does not change the coefficient estimates but produces robust confidence standard errors under heteroscedasticity (Stata Corporation 1993, 406-413).

²⁶As explained in Table 5, the firm size variable F_SIZE used can have integer values from 1 to 5 and is based on the assessments by the entrepreneurs. Normally, of course, one would want to use three dummies instead of a one variable in this type of situation, which also applies to the variables RISK and EXP_KNOW in the present analysis. Here, however, these specifications were found impossible to estimate, no doubt because of the small number of observations. I also tried other size-measures such as the number of employees today and the number of employees at the time of the adoption of exporting: the coefficients were negative but were statistically insignificant. Use of other size measures did not have major impact on the other significant coefficients in (A) or (B).

started to export in the 1990s have a higher probability of adopting the exporting strategy fast than firms which have started exporting earlier. Other characteristics included in the analysis do not, on the basis of the specification (A), affect significantly the speed of the adoption process. With the exception of the firm size and the need for experimental knowledge, the coefficient estimates have the expected signs shown in Table 6.

As to firm size, several alternative explanations for the unexpected negative relationship with the speed of adoption can be thought. The first one of these is that there may not be significant economies of scale (or scope) to be achieved in the initial phase of exporting. Intuitively, given that we are dealing with small firms, this might well be true. On the other hand, the negative coefficient may reflect a measurement error as exporting is likely to result in growth of firms and the firms in the sample are in most cases late adopters of exporting strategy in highly internationalized sectors. Thirdly, the result may reflect the fact that in a small firm the 10 per cent share of exports of the turnover is probably easier to achieve than in a large firm. One can also argue that the sector dummy may not be enough to capture the effect of product characteristics on the speed of adoption to the full, leaving open a possibility that small firm size is related to production of certain, highly specialized products.

Finding those firms that have started exporting in the 1990s likely to be quick adopters directly supports the third hypothesis according to which the

development of exporting in firms has accelerated in time, due to, among other developments, economic integration. Yet again the result is susceptible to another interpretation. Because of the major slump in the domestic markets in 1991-93 in Finland, the export shares of the firms may have grown even if there were no change in the actual values of firms' export deliveries. However, a scrutiny of the data reveals that this is unlikely to have influenced the analysis since only one of the quick adopters that have adopted the exporting strategy in 1990-1994 have the share of exports lower than 10 per cent either in 1994 or 1995. Of course it is possible that the domestic slump operated as a push factor, forcing firms to develop their exporting independent of economic integration.

The influence of the entrepreneurs' language skills on the likelihood of adopting exporting strategy fast can be examined in detail through the probability values given in Table 8. These are probabilities of a rapid adoption calculated for firms the managers of which have a knowledge of either 0, 1, 2, 3 or 4 foreign languages, *ceteris paribus*, in the specification B. In other words, the probabilities are computed for a hypothetical firm of average size, the level of exchange rate at the initial phase of exporting, time of starting exporting and sector.

The figures in Table 8 suggest that, if the entrepreneur has knowledge of two foreign languages instead of one (which is close to the average and the mode value), the probability of adopting the exporting strategy fast rises from 0.48 to

by 0.69, i.e. ~~for~~ more than 40 per cent. Learning one more foreign language increases this hypothetical probability of adopting the exporting strategy fast for another 23 per cent (i.e. from 0.69 to 0.85). While the positive coefficient is something one could expect, the magnitude of this effect is surprisingly large. This is likely to reflect the crucial role of an entrepreneur in a small firm. Naturally, language skills can be related to having a more international overall orientation to marketing, and possibly to earlier experience in export operations.²⁷

Table I.8. Probability of fast adoption of exporting strategy for "average" firms differing only as a result of manager's language skills (computed at the means of other X's in specification B).

	$\Phi(\beta'x)$
Knowledge of 0 foreign languages	0.28
Knowledge of 1 foreign languages	0.48
Knowledge of 2 foreign languages	0.69
Knowledge of 3 foreign languages	0.85
Knowledge of 4 foreign languages	0.94

²⁷ A closer look at the knowledge of languages reveals that four out of five entrepreneurs speak English and two out of five German, whereas knowledge of French and other languages is rather rare (Knowledge of Swedish was excluded from the analysis since this is a native language for some of the entrepreneurs). It was possible to include only German in the model (B) as separate dummy variable: it turned out to be statistically insignificant (p-value 0.11). The influence of earlier work experience of the entrepreneurs in large firms, foreign firms or consultancies was found to be negative in the model (B) but statistically insignificant (p-value 0.43).

A rapid development of exporting can be seen as a sign of competitiveness and success of the firm in exporting. Given this, it is relevant to ask whether a rapid adoption of exporting is an important element in the firm's overall success, or is exporting just one of many possible strategies for these firms? It is also unclear on the basis of the above analysis whether adopting exporting rapidly is actually related to product-specific rather than firm-specific characteristics, and whether it could result from some organizational changes or innovations in the firm.

A scrutiny of the interview material suggests that it is very unlikely that these alternative explanations would in general hold good. Quick adopters are not producing any specific goods and are not especially R&D oriented. Neither have they used any specific marketing channels at the initial phase of exporting. Instead, they show considerable variation in all these aspects. Also, the stimuli for exporting vary from unsolicited orders to intrinsic, strategic growth aims of firms, as they do in firms that have been slower adopters of exporting. Neither are there any salient common features in the basic competitive strategies (competitive - defensive) of the quick exporters, or statistically significant evidence suggesting that the strategies would differ from the ones adopted by the slower adopters of exporting. Further, in terms of net financial result in 1995, the quick adopters seem not to be more successful than the firms which developed exporting more slowly. Some of the quick developers of exporting firms have found export markets suddenly as a bonanza, whereas for some firms it has been

a natural strategy because of the smallness of domestic markets. Neither does a fast adoption of exporting seem to be related to organizational changes in the firms²⁸. Slow adopters perceive themselves as having improved their products and technology through exporting more than rapid adopters.

Overall, this analysis suggests that the really important factor in the firms' export success has been the influence of the entrepreneurs. This influence is likely to be the greater the smaller the firm, and thus the suggestion coincides with the finding that the influence of firm size on the speed of adoption is negative.

6. Conclusions

The above analysis generates both theoretical and policy implications. The theoretical model used in this chapter can describe a process as complex and dynamic as the development of exporting in a small firm in only a very crude way. Even so, the exercise suggests that the theory of innovation diffusion can be used to model the exporting operations of smaller firms even if we regard the traditional learning idea in the closed environment of the firm as inadequate as such. Instead, the more recent developments in the theory of innovation diffusion

²⁸This is suggested by a statistical test where a dummy variable that describes whether the firm has been re-established or not was included in the equation (B). The coefficient for the dummy was statistically insignificant and *negative* (p-value 0.14).

such as the rank effects theory, which was used in this chapter together with epidemic learning, seem to provide potential frameworks for theorizing export behaviour. The empirical analysis in this chapter focused mainly on the costs of exporting and the speed of adopting the exporting strategy, reflecting the predictions of the rank effects theory. The findings are largely in line with the predictions of the theoretical application.

It must of course be acknowledged that the actual number of observations that have contributed to the results in this study is small (26-55 firms), and the robustness of the results to an increase in the number of observations cannot be known. Subject to this qualification, however, the main suggestion of the analysis is clear: it seems not, among other things, the financial risk related to exporting, nor the lack of experience, nor the education level of the white collar staff that is likely to determine which small firms develop their exporting quickly, but rather the language skills of the entrepreneurs. This not only underlines the importance of language skills in the development of exporting, but is also a manifestation of the crucial role of an entrepreneur in a small firm. Hence, on the basis of the above analysis, supporting present and future entrepreneur's language skills could be the best export support for small firms.

Chapter II

**Product Differentiation in Small
Manufacturing Firms**

1. Introduction

According to the principle of differentiation firms differentiate²⁹ to relax price competition. This is a theoretically feasible result and a hypothesis that "corresponds to the recommendation found in most marketing texts concerning market segmentation, and to the observation that firms do successfully differentiate in the real world" (Tirole 1988, 286). Product differentiation has also been the centre of great attention in the recent theoretical literature in international trade. Yet in contrast to the plentiful theoretical literature, there are few in-depth empirical analyses of the differentiation behaviour of firms in the industrial economics literature. The search for empirical insights into differentiation by firms is made especially attractive by the fact that the results in theoretical studies have often turned out to be tied to technical nuances of the models employed (Waterson 1994, 133). In particular, one can argue that theoretical industry-centred models are not very good at predicting individual firms' behaviour when there are many strategic options available for firms. It has been argued that this relative underdevelopment of analysis starting from an individual firm's point of view pervades microeconomic theory in general (see Kay 1991).

²⁹The term differentiation is used in this article to refer to differentiation of competing products, whereas the term change in product specification refers to changes in the characteristics of a firm's product.

The purpose of this paper is to provide insights into the differentiation behaviour of small industrial firms in Finland. Contrary to theoretical studies, my point of view is firm-based rather than industry-based. The study uses the case study method of research, which is a rigorous methodology that allows decision-making processes and causality to be studied, being ideal for studying research topics where existing theory is inadequate (Chetty 1997). The present longitudinal study of product strategies is especially relevant given two developments in the economy of Finland. Firstly, Finland joined the European Union in the beginning of 1995, which may have encouraged firms to rearrange their products due to a decrease in transportation costs and/or changes in the intensity of international competition they potentially face. Secondly, the economy has gone through a major depression in the early years of the 1990's, which may have been reflected in firms' product strategies as well.

I also tentatively present a methodology to examine differentiation by firms by applying the so-called characteristics approach. In this tentatively proposed methodology a set of parameters of competition of firms is taken as a given set of characteristics that typify products, and changes in this spectrum are assumed to reflect changes in product specifications. Empirically the study uses a data-set collected by interviewing 56 managing directors of industrial small firms in Finland in 1992 and again in 1996. For the case-study, additional material was collected in in-depth interviews of four of the managers in the spring of 1997.

The paper has been organized as follows. The next few pages survey the literature on product differentiation. Section 3 presents the methodology based on the parameters of competition. The empirical analyses are presented in Section 4, with the statistical approach presented first and the case study of firms second. Section 5 summarizes observations based on the case-study, and Section 6 ends the article by considering implications of the study for theory.

2. How and why do firms differentiate?

Differentiation has been considered as "one of the most pervasive features of modern economies" (Waterson 1994, 105). By differentiating their products from competitors' products firms seek to lessen the price elasticity of the demand they face, i.e. to obtain (short term) market power.³⁰ According to Porter (1980) differentiation provides shelter against competitive rivalry because of brand loyalty by customers and resulting lower sensitivity to price. This customer loyalty and the need for a competitor to overcome uniqueness form entry barriers to industries.

³⁰In slightly more formal terms, suppose that two firms produce products which are perfect substitutes from the point of view of consumers. Both firms in this elementary example face a demand $P = a - b_1q_1 - b_2q_2$, where a and $b_1 = b_2$ are positive constants. If the products become differentiated, $b_1 - b_2$ become > 0 for firm 1 and $b_2 - b_1 > 0$ for firm 2, i.e. the residual demand curves the firms face become more downward sloped, the demand becomes less elastic with respect to the price and the firms gain (short term) market power. (Carlton and Perloff 1994, 288)

On the other hand, achieving differentiation sometimes preclude gaining high market share (Porter 1980, 38). Naturally, rationally behaving firms differentiate only if it is anticipated to be profitable in the sense that the expected loss of demand resulting from a potentially smaller market segment is outweighed by the expected benefits from less intense price competition (see Tirole 1988, 286 and Moorthy 1988). There are also other reasons which may discourage differentiation, such as "agglomeration economies" (see Swann 1985). These are mutual external economies accruing to two or more producers selling similar products. According to Swann (op.cit., 36), in product space, these are of two sorts: standardization economies and informational externalities. The standardization economies are exemplified by a firm making standard size paper since it fits standard envelopes, photocopiers etc., and the informational economies by a potential entrant who chooses a particular design that has been successfully produced and marketed by an incumbent firm. Technical standardization as a factor limiting possibilities of differentiation is also mentioned by Buigues and Jacquemin (1989). Tirole (1988, 286-287) divides forces opposing differentiation into three categories. These are, firstly, positive externalities, secondly, that firms wish to "be where the demand is", and thirdly, that price competition may be subdued for legal or technical reasons in which case differentiation to relax it is not relevant.

2.1. Horizontal and vertical differentiation

If an enterprise embraces the differentiation strategy it has, in theoretical terms, two possibilities. It can differentiate in either the horizontal or vertical dimension: in general, differentiation is vertical when it is based on quality differences between related products, and horizontal when it is based on differences in the tastes of consumers.³¹ Following the characteristics approach to differentiation (Waterson 1994, 106):

Definition 1:

"If we consider a class of goods as being typified by a set of (desirable) characteristics, then two varieties are vertically differentiated when the first contains more of some or all characteristics than the second, so that all rational consumers given a free choice would opt for the first. They are horizontally differentiated when one contains more of some but fewer of other characteristics, so that two consumers exhibiting different tastes offered a free choice would not unambiguously plump for the same one".

This definition, however, seems fully exhaustive only under certain assumptions.

³¹Greenaway (1984) distinguishes conceptually also a third form, technological differentiation. It occurs when one or more of the core characteristics of a product are technologically altered. However, this resembles closely vertical differentiation and, as Greenaway himself admits (p. 232), "in practice the distinction (between the two) may be somewhat opaque".

Notably, in the case of the vertical differentiation, if the consumers were also concerned with prices of products, differing prices could offset any difference in the other characteristics of the two products. Showing this, Anglin (1992) argues that "the important distinction between different models of product differentiation lies in an understanding of fixed costs", which in turn reinforces earlier reasoning by Shaked and Sutton (e.g., 1987).³² In addition, it seems likely that horizontal differentiation defined in the above manner also involves vertical differentiation if one of the two products contains more of several characteristics but less of only few characteristics than the other one. Nevertheless, for the present empirical purposes it seems reasonable to adopt the above definition based on the difference in the way of ranking of products.

The principle of differentiation, i.e., that firms differentiate to relax price competition, has been shown to hold in both horizontal and vertical differentiation models. In the case of the horizontal differentiation, an illustrative example is the study by Neven (Neven 1985). He modifies Hotelling's (1929) framework to one with quadratic transport costs and uses the perfect equilibrium

³²See also contributions by Cremer and Thisse (1991) and Dos Santos Ferreira and Thisse (1996). Cremer and Thisse show that many horizontal differentiation models are actually special cases of a vertical differentiation model and thus can yield similar results. Dos Santos Ferreira and Thisse, for their part, combine these two major types of differentiation using the spatial duopoly model proposed by Launhardt in the 1880's, where the firms are allowed to have different transportation technologies.

as the solution concept in a two-period oligopoly game.³³ In the first period firms choose the product (i.e. the level of differentiation) and in the second period a price for the product. Given the future price competition (subgame perfection and Bertrand-Nash equilibrium) in the second period, the firms choose to maximize the level of differentiation in the first period of the game. The intuition behind the behaviour of firms is in this game apparent: A desire to avoid price competition drives firms to choose as different products as possible. Waterson (1994, 118) suggests that a tendency leading to superabundant variety is somewhat general in address models of differentiation.

In the case of the vertical differentiation the intuition is analogous. Shaked and Sutton (1982), for instance, use the framework of perfect equilibrium in a three-stage non-cooperative game. Consumers are identical in tastes but differing in income. In the first period firms choose whether to enter or not, in the second the level of differentiation (quality), and in the final stage a price for the product. It appears that "... the two firms choose distinct qualities", because "as their qualities become close, price competition between the increasingly similar

³³It must be noted here that the original model by Hotelling (1929) runs somewhat counter intuition with respect to the effect of an increase in competition: if the two firms in the model moved close together both the optimal output and price would be increased (Waterson 1994, 117). As well known, the model has no equilibrium in pure strategies. Of course, it was D'Aspremont et al. (1979) who made the contribution of quadratic transportation costs in the Hotelling's model first, and showed that it leads to maximal differentiation in this model. Neven (1985) is used here as an example due to the fact that the two period perfect equilibrium game illustrates the principle of differentiation more effectively.

products reduces the profit of both firms" (p. 12).³⁴ It has also been suggested that, in a longer run, vertical differentiation can have repercussions on industry structure if improving quality increases steeply fixed costs instead of variable costs³⁵, and that more differentiation occurs under price competition than under quality competition whatever the nature of the cost to improve quality (Motta 1993). It seems also reasonable to assume that in some circumstances quality may deteriorate and the price of the product lowered by a firm wishing to become different from its competitors (see Lancaster 1979, 27-28).

In practice, differentiation is possible not only via the physical characteristics of products, but also by incorporated post-selling services and other features of a product-customer relationship (e.g., Buigues and Jacquemin 1989, 54).

³⁴Later (see, e.g., Shaked and Sutton 1987) the authors have suggested that the key results of the analysis are fairly robust in respect of alternative specifications of the model.

³⁵See Gabszewicz and Thisse (1979), and contributions by Shaked and Sutton (see, e.g., 1982, 1984 and 1987, and Sutton 1986 and 1991). The suggested role of vertical differentiation in determining an industry structure becomes visible in a case of a market expansion or a fall in fixed costs in relation to variable costs. Two types of outcomes have been shown theoretically to be possible (Shaked and Sutton 1984, 35): Firstly, where the proportion of fixed costs of the costs of improving "quality" is high, the number of enterprises with positive market shares is limited in that industry irrespective of the size of the market. The intuition is as follows: there is "room" for only limited number of firms - with distinct qualities to soften price competition - in the industry, because if the quality of a product was low enough, even the poorest consumers would buy higher quality. On the other hand, when developing quality increases substantially variable unit costs in contrast to fixed costs, these models of vertical differentiation yield an outcome which is comparable to the case of the horizontal differentiation: As the size of the market increases, the number of firms entering with different specifications rises boundlessly. Underlying technology and tastes of consumers determine which one of these possibilities dominate.

According to Porter (1980, 37) a differentiation strategy may be based on design or brand image, technology, features, customer network or other dimensions, and ideally a firm differentiates itself along several dimensions. Actually, all non-price factors of competitiveness of firms (sometimes called the "real competitiveness"), may be used by firms in differentiation (Eskelinen and Lautanen 1996). According to Piercy (1982) these relate either to a product itself (such as quality and design), supporting services (such as advice and assistance to customers prior to purchase, after sales services, terms and conditions of payment or guarantees) or advertising and marketing (marketing channels or intangible values such as brand images).

Porter (1980, 38) stresses that differentiation strategy does not allow the firm to ignore costs, but rather low costs are not the primary target for a firm that has adopted this strategy. The need for low costs is reduced by the fact that differentiation increases price-cost margins. As to costs of differentiation, costs from developing a better product, or an image of a superb product (vertical differentiation), are likely to be fixed type costs from R&D or advertising, rather than variable type costs such as labour or raw material outlays (e.g., Shaked and Sutton 1984). Models of vertical differentiation suggest that if a firm is successful in producing a product better in some regard than those of its rivals, with a limited increase in its unit variable costs, it can capture a significant share of the market (Sutton 1986, 397). On the other hand, where technology and tastes of consumers make such a development useless, the industry is likely to stay

fragmented (i.e., the differentiation by firms resembles horizontal differentiation, as explained in the above footnote).

Kay's (Kay 1993) "distinctive capabilities" of firms, i.e., the features of a firm's position or organization which cannot readily be reproduced by competitors, resemble closely differentiation as a source of competitive advantage. A distinctive capability may be generally based on architecture (collection of relational contracts), innovation (new products, processes, or styles of relationship), reputation (high quality in character), or the ownership of strategic assets (a source of competitive advantage that is derived from factors external to the firm rather than from its own distinctive capabilities). According to Kay (op. cit.) a distinctive capability becomes a competitive advantage when it is applied in an industry and brought to a market, which normally has both product and geographic dimensions. Clearly, a distinctive capability may also result in an ability to produce a product with lower costs than competitors, in which case differentiation generally would not be the ideal primary strategic target for the firm.

2.2. Empirical approaches

In contrast to the theoretical literature there is surprisingly little empirical

research on product differentiation *per se* in the industrial economic literature.³⁶

Econometric studies of differentiated products markets have often focused on automobile markets, whereas examples of studies on other markets are represented by Shaw (1982), Swann (1985) and Sutton (1991). Shaw focuses on product competition in the UK agricultural fertilizer market using the characteristics approach. By using the case-study method of research he is able to capture nicely the process of competition (in terms of introduction, relocation and proliferation of products) between three main producers of fertilizers over a period of 30 years from 1958 till 1978. Products are identified in the analysis by their plant food ratios and the total plant food contents. The conclusions suggest, for example, that competition for market share resulted generally in product proliferation rather than leapfrogging behaviour by the firms, and that many products were already initially optimally located entailing thus no changes in their characteristics over a long time. Some (weak) support for birth of clusters of minimally differentiated products is found. Overall, although the approach of this early study is ingenious, it seems to have the understandable limitation that it is explicitly concerned only with the horizontal differentiation of products.

The paper by Swann analyses product competition in microprocessors through

³⁶Product differentiation has also been a much discussed topic in empirical studies of international trade. Yet, understandably, these studies have not focused on the differentiation behaviour of firms or its motivations *per se*, but succeeded in explaining intra-industry trade by product differentiation (see, e.g., Hummels and Levinsohn 1993). On the measurement of product differentiation in these studies, see, e.g., Greenaway (1984).

variations of the Hotelling's (1929) model. Thus, again, it is only concerned with horizontal differentiation. The study focuses on a role for "agglomeration economies", i.e., mutual external economies accruing to two or more producers selling similar products, that lessen firms' incentives to locate apart from each other. Product developments in microprocessors are followed over the period 1971-81 through three key parameters: power of the device, number of computer features incorporated in the one device and (subjectively measured) status of device. The results tend to support the role of agglomeration economies. Actually, the data shows two types of clustering: copying established designs, and tendency for some producers to cluster in their own designs. Consequently Swann concludes (p. 52) that models which predict product dispersion are inadequate for the analysis of product competition in the microprocessor industry if they do not give a role to agglomeration economies. Sutton (1991), for his part, finds in an extensive study of food industries support for the link between a concentrated structure and advertising intensity as the model of vertical differentiation (where costs of improvement in product quality falls mainly on fixed costs) predicts. Hence the results from this study implicitly also support the principle of differentiation in the considered industries. It is worth noting that the key part of the evidence can also here be seen to be based on case studies of industries, rather than on the econometric analysis.

An approach to differentiated products markets that has got much attention in the literature is the so-called hedonic price approach (see, e.g., Cowling and Cubbin

1971 and Bitros and Panas 1988). This approach is based on the idea that bundles of characteristics of products can be used in an econometric analysis to explain the price of the products. Markets for cars have been popular subjects for investigations, since cars are clearly indivisible products and because different models of cars offer reasonably easily distinguishable bundles of characteristics implying quality differences between different models. This is important due to the fact that the approach is based on the assumption that the relevant characteristics of the models are included in the analysis. Given that this assumption is satisfied, the coefficients from regressing prices on the characteristics can be interpreted as implicit prices of the characteristics that reflect the consumers' marginal valuation of the characteristics concerned. These prices equal the marginal cost of supplying a characteristic and, if the differentiation gives firms market power, a monopoly element on the top of it (Hay 1979, 90-92). In general, however, it seems reasonable to suspect that the hedonic prices approach is most suitable in the context of markets where vertical differentiation is important. This is because horizontal differentiation does not necessarily manifest itself in price differences between the different models (Greenaway and Milner 1986, 120).

Berry et al. (1995) and Goldberg (1995) have developed further techniques for econometrically analysing demand and supply in differentiated products markets using the characteristics approach. In a way these analyses may be seen as an outgrowth of the critique of the hedonic price approach. The distinctive feature of

them is that they apply discrete choice models in which individual choice behaviour is explicitly modeled (for the theory, see, e.g., Anderson et al. 1992 and 1995). The analyses can be argued to take into account horizontal differentiation better than hedonic regressions, or analyses based on models of pure vertical differentiation, such as Bresnahan (1987). The latter studied pricing in the U.S. auto markets by applying the model by Shaked and Sutton (1982).

Berry et al. (op.cit.,) consider two problems that rise quite naturally in the characteristics approach to differentiated products markets. The first one of these concerns the assumed functional form of the consumer utility and the resulting pattern of cross-price elasticities between different products. The second problem is related to the correlation between prices (which are observed by the econometrician) and product characteristics (some of which are observed by consumers but not by the econometrician), and the bias in estimated elasticities that this induces. The authors show in the paper that these problems can be solved by moving from individual to aggregate demands by the simulation method, and on the other hand, by solving a non-linear simultaneous equations problem related to the endogeneity of prices to account for the second problem.

While Berry et al. (op. cit.) use mostly aggregate data, Goldberg (op.cit.) analyses the same oligolistic markets using disaggregate consumer data. Here the process of buying a specific car is modelled as a nested sequence of logit models, which allows explicit consideration of an outside good and avoids some unintuitive

substitution patterns imposed by a simple logit model. The total demand is derived as the weighted sum of individual household demands. Endogeneity of prices has been avoided by assuming in the demand side estimation procedure that a single household does not have an impact on vehicle prices and characteristics.

Unfortunately the econometric auto market studies cited seem not to provide very extensive intuition regarding the differentiation behaviour of individual firms or the causal relations related to changes in product locations. Bresnahan (1987) provides evidence that the decrease in prices and increase in quantities observed in 1955 was due to the breakdown of a cartel, and Goldberg (1995) concludes, for example, that quota restrictions on Japanese car imports in the 1980's have resulted in an increase in overall quality and prices of automobile sales in the U.S. However, the motives of firms to increase quality (indeed, to be different from competitors or to imitate them), and the role of advertising and a firm's reputation for quality as perceived by customers, amongst other issues, remain fairly unclear on the basis of the studies.

2.3. How does economic integration affect differentiation by firms?

In the current conditions of deepening economic integration in Europe, the principle of differentiation has special significance as the potential benefits from

the internal market programme are to stem to a considerable degree from an increase in competition by firms (Cecchini 1988, Emerson et al. 1988, see also Jacquemin and Wright 1993). Realization of the so-called dynamic gains, in particular, involves processes such as an improvement of the organisational efficiency of firms and an increase in innovative activity that are boosted by competition. A straightforward conclusion from the above argument is that the pressure of competition that is created by the internal market programme and concomitant competition policy tends to lose its edge through the intrinsic aim of firms to differentiate their products. Of course, on the other hand, differentiation is beneficial for consumers if it results in products which are better in quality or otherwise closer to individuals' tastes, but less expensive.

Models of international trade with product differentiation generally assume that consumers' welfare can be increased by trade liberalization either in the form of increased variety of products available to consumers and/or lower prices resulting from harsher competition. Motta (1992) divides the models of international trade in differentiated products in general into monopolistic and oligopolistic competition models. According to him (Motta 1992, 578) the monopolistic competition models tend to emphasize the result that trade benefits all partner countries either in the form of a greater variety of differentiated products available to consumers, or in the form of both greater variety and lower

prices because of increased competition.³⁷ In oligopolistic models the answer to the question what is the effect of economic integration on especially horizontal differentiation by firms in a small country seems less conclusive. It has been argued that the outcomes are fairly dependent on the specific assumptions made in the models about, among other things, the pattern of consumers' choice over the differentiated products (Shaked and Sutton 1984, 34), and it is even quite possible to achieve outcomes where trade decreases the number of horizontally differentiating firms and the variety of products available to consumers in a smaller country (see, e.g., Eaton and Kierzkowski 1984). Neither do prices necessarily fall in this case.

As to vertical differentiation models, outcomes seem more robust. Notably, Motta (1992) reworks the model by Shaked and Sutton (1984) arguing that the crucial assumption is that of an industry where goods differ by quality rather than the particular functional forms adopted. As in the original paper, short run effects (qualities given) and long run effects (qualities variable) are separately analyzed. In the short run, given that the small country firms are producing in the integrated

³⁷See, however, Lancaster (1984) where imposing a tariff increases the number of products available and, in a longer term, number of firms in the smaller economy. This is because a tariff decreases the competitiveness of imports making the demand in the small country less price elastic (in the short term), which in turn attracts new entry. Initially, however, trade also increases the degree of product variety in this specific model (p.152). The number of *firms* producing differentiated goods in a smaller economy may also decrease in a case where firms are allowed to have differing market shares in the domestic and export markets (Venables 1987) or where firms in a particular industry are asymmetric in export behaviour, i.e., some of them export while the others do not (Venables 1994).

market equilibrium, there is a price reduction because of harsher competition. In the long run, given that all the small country firms do not go bust because of a too wide quality gap to the large country's firms prior to integration, qualities also increase. This is because under harsher competition every firm has an incentive to increase its product quality above the autarky level. The result is also in line with Sutton (1991) as the finiteness property holds in the model, i.e., there exists an upper limit to number of firms producing differing qualities no matter how much the markets expand.

However, it seems possible that competition may also ease in some smaller and more peripheral country markets (such as Finland) as a consequence of the integration-induced reorganization of economic activities. This possibility rises, for example, in Krugman and Venables (1990) paper where the authors consider the effect of economic integration on the competitiveness of a small peripheral country in a two-country model. The smaller, peripheral country in the model is characterized by lower production costs but higher total transport costs to the other market. The authors show that a moderate (but not complete) reduction in transport costs can result in an equilibrium where the entire production is shifted to the more central country whereas the small one is being served exclusively by exports. Itaki and Waterson (1993) model a similar situation from a point of view of an multinational enterprise. The argument is that an integration-induced reduction in transport costs may encourage existing multinational firms, that perform similar activities in more than one country, to concentrate their

production geographically into fewer spots and serve the rest of their markets by exporting.

3. The empirical approach based on parameters of competition of firms

In this chapter I describe a methodology to analyze differentiation behaviour of firms on the basis of information on their parameters of competition. The virtue of the approach is that no direct information on the product characteristics, prices or costs of firms are needed.

3.1. Parameters of competition and a product spectrum

Parameters of competition, such as price, quality or design, describe a firm's own perception of what factors their product's competitiveness is based on.

Consequently, a set of parameters of competition can be seen as a given set of characteristics which typify products: a good is described by the *importance* of different parameters of competition for that good, hereafter a product spectrum.

Thus, changes in product specification will by assumption be reflected as changes in this spectrum (cf. Lancaster 1979).

To distinguish between the vertical and horizontal changes in a firm's product

specification in this approach, it is useful to review the definition 1 (in Section 2). Consider then a good G_T being characterized at time T by the product spectrum (p_T, n_{iT}) , which consists of the importance of price, denoted by p , and the importance of more than one (but a finite number of) other parameters of competition, $n_i = \{n_1, n_2, \dots, n_l\}$. Assume an earlier model of this good, at time t , $t < T$, be denoted by G_t . Distinguishing between horizontal and vertical changes in product specification is now straightforward:

Definition 2:

The two models of the good, G_t and G_T , $T > t$, are horizontally different specifications when the importance of at least one non-price parameter n_i is higher at the moment T than at t but the importance of at least one other non-price parameter is lower, so that two consumers given free option between the products at the moment T would not necessarily choose the same one. The two products are vertically different specifications when the importance of one or more non-price parameter is greater (or smaller) at the moment T than at t , so that consumers given equal possibilities to opt for any of the two products at the moment T would unanimously prefer the same one.

Defining the difference between the two types of changes in product specification in the above manner rests on differences between the two product spectrums defined at different points of time. Product spectrums of different enterprises cannot, by assumption, be reliably compared with each other because they are

based on subjective evaluations. The definition is also subject to four assumptions. Firstly, indivisibility of goods is assumed to ensure the possibility of vertical differentiation. Secondly, the utility of consumers, let it be denoted by U , is assumed to strictly increase with respect to the importance of non-price parameters of competition of firms, i.e., $U'(n_i) > 0$ for every $n_i = \{n_1, \dots, n_I\}$. Yet there is no reason to assume that the hypothetical effects of different parameters of competition on the utility of consumers would be mutually comparable, or linear. Thirdly, it is assumed that consumers, who differ in their tastes and incomes, appraise products on the basis of non-price characteristics, and fourthly, of course, that the importance of these non-price parameters can be objectively assessed.

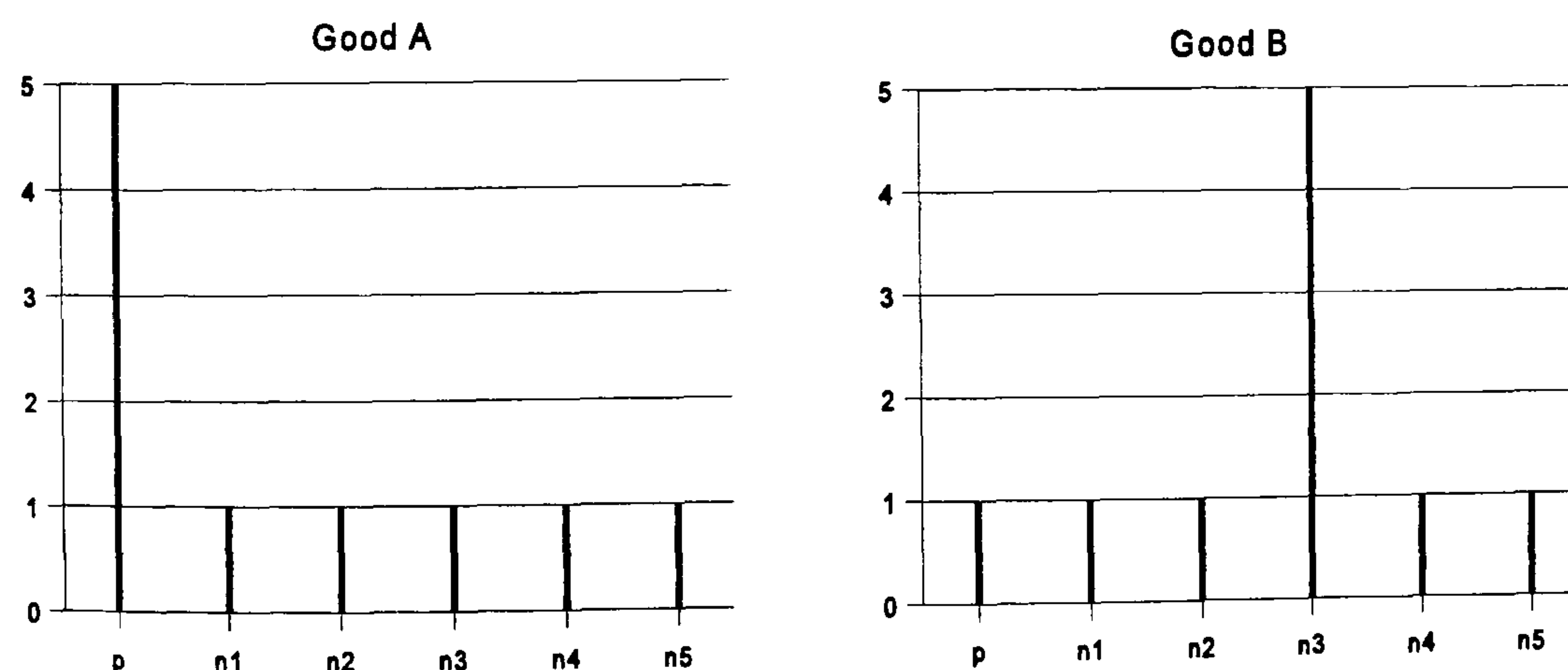
The first of these assumptions is a standard technical assumption in the address models of product differentiation, and also reasonable here because the empirical analysis focuses on manufactured wood-processing and engineering products. The purpose of the second assumption is to guarantee that a vertical change in specification implies an improvement (or deterioration) of the "quality" of a product. This is apparently satisfied as the non-price parameters are measures used by enterprises in competition for consumers. The third assumption guarantees that a quality difference between two specifications of a product cannot be offset by a price difference. It should be noticed that offsetting a quality difference by price difference does not eliminate the quality difference per se, which will still be observable to consumers. Hence, the location of the

product in the product space changes. It is the last one of the assumptions which is the Achilles's heel of the approach since it is susceptible to subjective interpretations.

3.2. A product spectrum and the principle of differentiation

Parameters of competition reflect the elasticities of demand with respect to the corresponding characteristics of the product. To see this suppose again that a good is characterized at a moment by a set of firm's parameters of competition (p, n_i), $i = 1, \dots, 5$. Let the importance of parameters of competition for the firm/product be measured by, say, an integer scale from 1 (not important) to 5 (very important). Consider then the two different product spectrums shown in Figure 1.

Figure II.1. Examples of product spectrums.



For the good A price is the only important parameter of competition and thus the real price of the product is likely to be low in comparison to prices of competing products (Figure 1). As the competitiveness of this product in this market situation depends exclusively on the price of the product, there must be close substitutes for the product within consumers' reach. Clearly, a marginal change in the real price of the product would presumably have a substantially large effect on the sales in this situation, i.e., the demand is elastic with respect to the price of the product. Consider then the product spectrum B. In this market situation the elasticity of the demand is high with respect to the characteristic n_3 , suggesting either that the firm operates in a market (segment) where the dominant form of competition is captured by the characteristic n_3 , or that the product of the firm is highly specialized with respect to the characteristic considered. Note also that the market resembles a monopoly if the demand is inelastic with respect to all (relevant) characteristics, and a competitive market in case the demand is fully elastic with respect to all (relevant) characteristics.

Figure II.2. Product spectrums: Vertical and Horizontal differentiation

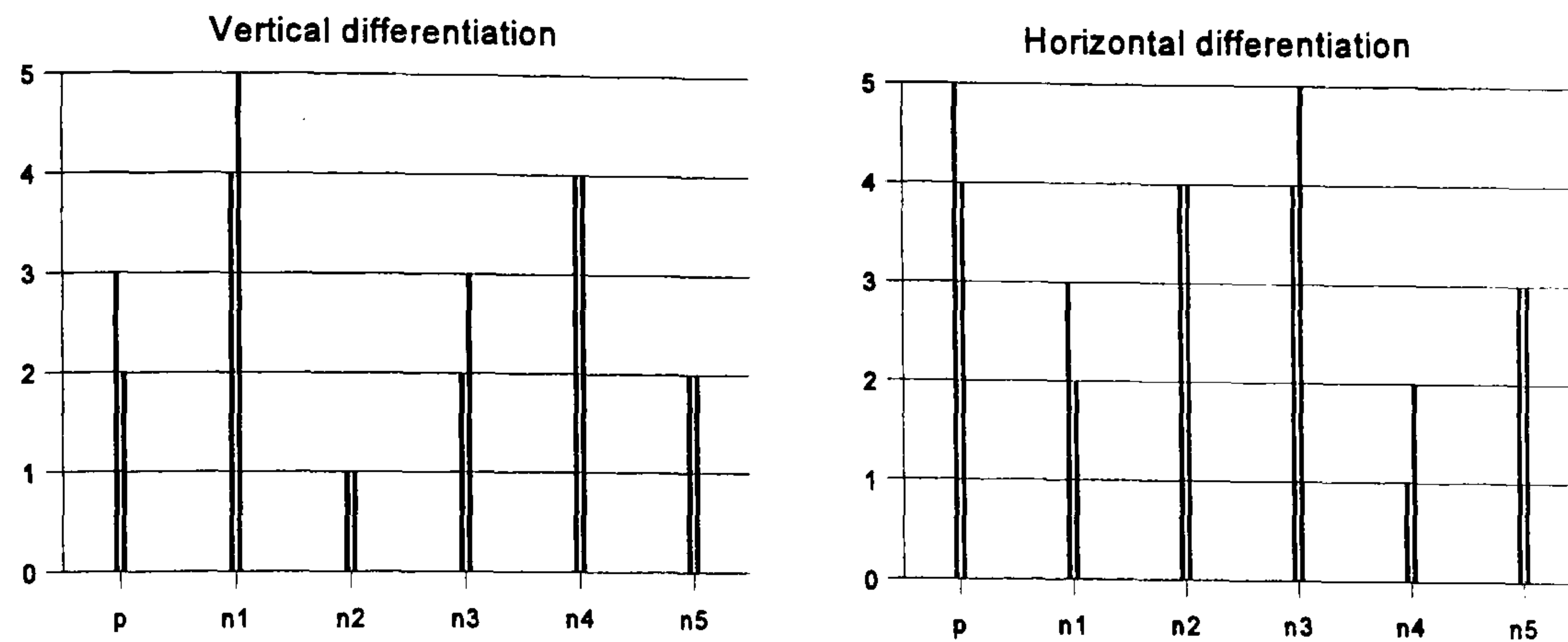


Figure 2 exemplifies the principle of differentiation in the cases of the vertical and horizontal differentiation. As noted above, changes in product specification are by assumption reflected in different spectrums of non-price parameters of competition. Now, a reduction in the importance of price subsequent to change in the product specification implies that the firm has become less concerned with the price of its product with respect to competing products. In other words, by assumption, the enterprise has been successful in softening price competition through differentiation. In the case of the vertical differentiation, one (or more) of the non-price parameters get more (or less) emphasis, whereas in the case of the horizontal differentiation changes in the importance of (at least) two of the non-price parameters are in the opposite directions between the two points of time, t and T , $T > t$ (Figure 2).

4. Empirical observations

4.1. The data

The data-set used in this statistical analysis is based on two separate interviews of 56 managing directors of industrial small businesses in Finland. These interviews were carried out in the summer of 1992 and in the spring of 1996, the latter one of which especially for this study (for the questionnaire, see Appendix 1).³⁸ In addition, the managing directors of four firms subject to a closer investigation (in Section 4.5.) were interviewed for a third time in the spring of 1997. The firms in the data-set are independent and locally-owned enterprises in 2 wood-processing (15 enterprises)³⁹ and 4 engineering (41 enterprises) 3-digit sectors, and they each employ from 4 to 167 persons. The 56 firms represent about 3 per cent of firms employing from 10 to 199 employees in the wood-

¹⁰In total the data-set includes 80 firms interviewed in 1992 and 76 firms interviewed in 1996, but due to changes in the firms' management and main products only 56 enterprises were accepted for the analysis. The interviews in 1992 were associated with the Nordic comparative study "Småföretagens internationalisering - en studie av anpassningsprocesser till EG'92 och regional utveckling" (see Lindmark et al. 1994, Eskelinen et al. 1994 and Lautanen 1994). The 1996 sample also includes those firms that had been adjudicated bankrupt between 1992 and 1996 but which had been re-established afterwards. The interviews were structured, confidential, made in face-to-face situations, and the interviewers (usually a pair) were academic persons involved in the project.

³⁹One firm processing paper products (ISIC 341) has been incorporated into wood-processing sector.

processing and engineering sectors in Finland.⁴⁰ Basic information on the firms in the data-set is presented in Table 1.

Table II.1. Basic information on the firms in the data-set

	Wood- processing SIC 33	Engineering SIC 38	Total
Number of firms	15	41	56
of which, %			
- subcontractors	7	40	31
- producers of semi-finished products or components	40	20	26
- producers of final products	53	40	44
Number of employees	44	34	36
- average	23	22	22
- median			
Number of firms with regular exports (column %)	8 (53)	20 (49)	28 (50)
- average share of exports of the turnover	62	35	43
Number of failures between 1992-96 (column %)	1 (7)	5 (12)	6 (11)

The bulk of the enterprises are comparatively small, as the median number of employees (22) indicates. Every second one of the firms had regular exports in 1995, with an average share of exports of the turnover of 43 per cent. The data on

⁴⁰Central Statistical Office of Finland, Register of Enterprises.

the parameters of competition consists of the assessments of the entrepreneurs on how important price and five other attributes (quality, technical standard, reliability of delivery, design and customization) were for the competitiveness of the main product of the enterprise at the time of each interview. These assessments are given on an integer scale from 1 (no importance) to 5 (very important). Thus, the present empirical approach can describe $3125 (= 5^5)$ different product spectrums. Naturally, because changes in these spectrums are restricted in the two extreme cases where all the parameters of competition have either highest or lowest meaning, horizontal changes in product specification in accordance with Definition 2 can only take place in 3123 of these spectrums. In addition to the information on the parameters of competition, the data-set includes versatile information on the differentiation behaviour, competitive conditions and exporting operations of the firms.

The potential influences of economic integration on firms' operations follow from the fact that Finland became a member in the European Economic Area (EEA) in 1994 and the European Union (EU) in the beginning of 1995. Trade in industrial goods, however, had been free of tariffs between the EU (or its predecessors) and Finland since the late 1970's⁴¹. Consequently, this study is

⁴¹The free trade agreement between Finland and the European Economic Community (EEC) was signed in 1973, but a majority of the institution did not come into force before 1978. This agreement covered trade in industrial goods with the exception of some food industry sectors. The openness of Finland's economy to international competition has also been due to the country's membership of the European Free Trade Association (EFTA). Finland was an associated member of

concerned with the effects of a reduction in the non-tariff barriers to trade implied by the internal market programme. Firms have to, for example, cope with the fact that earlier regulatory practices in foreign direct investments into Finland have been abolished⁴², and that lower non-tariff barriers to trade may intensify import competition. Finland also joined the Exchange Rate Mechanism (ERM) in 1996 and it is an established aim of the country to join the Economic and Monetary Union (EMU) once it is established. Overall, one can argue that given the initial openness of the Finnish wood and metal industries to international competition, the effects of the recent deepening of integration are to be found most clear at the level of firms, especially in their strategies and competitive conditions⁴³.

On the other hand, as the economies of its Scandinavian neighbour countries, Norway and Sweden, the economy of Finland went through one of the most severe depressions in its history in the early years of the 1990's, which may also

EFTA from 1961 onwards and became a full member in 1986. For a succinct historical survey on the integration of Finland and Western Europe, see ETLA 1992, 28-32.

⁴²These were restrictive especially in the forest industries until 1989. On the whole, foreign direct investments into Finnish manufacturing industry were insignificantly small still even at the beginning of 1993 (Heikkilä 1994).

⁴³For the import penetration ratios and the shares of exports of production in the wood-processing and metal sectors studied in this paper, see Lautanen (1994). The argument is supported by the industry-level studies that suggest that the conventional comparative advantage has been largely exploited in the Northern Europe (see Neven 1990, Lundberg 1992). The key competitive advantages are now seen to be based increasingly on special skills developed by firms especially in the high-tech sectors (e.g. Jacquemin and Sapir 1991, 88).

have been reflected in firms' product strategies. In terms of GDP the economy declined in 1991-1992 by about 10 per cent, after which it started to recover under the export sectors' lead. The very depth of the recession followed from several simultaneous adverse demand and supply shocks, which include a too rapid deregulation of the financial markets in the mid-1980's, the overheating of the economy and expansion of the public sector in the late 1980's, the collapse in exports to the Soviet Union and a cyclical downturn in the Western European markets, unrealistically high external value of markka at the turn of the decade, and rising public and foreign debt (see, e.g., Bordes et al. 1993). The crisis increased both the number of bankruptcies and established firms, thus leaving its traces on the industrial structure of the economy. In the present data, about one in ten enterprises went through a bankruptcy and were re-established between 1992 and 1996 (Table 1). Only one of the six failed firms was a regularly exporting firm, which is in line with the view that the domestic sector was more seriously hurt than the exporting sector of the economy.

4.2. The hypotheses

On the basis of the literature review in Section 2 the following three propositions are of interest in the statistical analysis:

1. Horizontal changes in product specification will be more common than

vertical ones (improving quality), since horizontal differentiation can be seen as an easier and less costly process than improving quality.

2. The differentiation behaviour of exporting enterprises differs from that of firms operating only in the domestic markets. This is because the influences of economic integration can be assumed to differ between exporting and non-exporting firms.

3. Economic integration has lead to pressures to improve quality of products or to horizontal changes in product specification, and to a decrease in relative price of products as a result of harsher competition.

4.3. Observations based on statistical analyses

The managers' views on the importance, principal type (horizontal or vertical) and practical means of differentiation in their firms are presented in Table 2. The information is based on the 1996 interview and analyzed in Table 2 by the two aggregate sectors and according to export status (whether a firm is exporting regularly or not). Overall, as many as two out of three managers consider differentiation as an important or very important part of their firm's competitive strategy. In almost every second case the differentiation mainly aims at vertical differentiation (improving quality of the product above the quality of

competitors' products), whereas aiming at horizontal type of differentiation is less frequent. This finding is somewhat contrary to expectations (Hypothesis 1) and leads to an important suggestion: a firm's attempt at vertical differentiation may be interpreted as horizontal differentiation at the level of the markets if firms have specialized in different factors of quality. This possibility becomes evident if one considers changes in the product spectrums of two goods (cf. Figure 2 above) which become vertically differentiated along a single, but different, characteristic: if the impacts of these two different kind of quality improvements on the utility of consumers are equal, the two products have become (only) horizontally differentiated. I will come back to this important observation below. To go back to Table 2, on the basis of a simple χ^2 -test, vertical differentiation seems to be less important for engineering enterprises than for wood-processing firms.

Table II.2. Descriptive data on the differentiation

Per cent of firms belonging to the referred group; W= wood-processing firms, n=15, E= engineering firms, n=41, RE= firms with regular exporting, n= 28, NE=firms no regular exporting operations, n=28, T= all firms, n=56

Overall meaning of differentiation for the firm:

	W	E	RE	NE	T
1. No meaning at all	0	8	4	7	6
2.	14	18	15	18	17
3.	7	13	4	18	11
4.	64	28	46	29	37
5. Very important	14	35	31	29	30

Principal type of differentiation:

	W	E	RE	NE	T
1. Vertical	21	58	42	54	48
2. Horizontal	14	13	19	7	14
3. Both	64	29	39	39	39

Meaning of physical characteristics of a product in differentiation:

	W	E	RE	NE	T
1. No importance	7	13	8	15	12
2. Some importance	43	34	34	39	37
3. Most important	50	53	58	46	52

Meaning of post-selling services, conditions of sale, by-products etc. in differentiation:

	W	E	RE	NE	T
1. No importance	36	40	46	31	39
2. Some importance	36	26	35	23	29
3. Most important	29	34	19	46	33

Meaning of advertising in differentiation:

	W	E	RE	NE	T
1. No importance	43	55	42	62	52
2. Some importance	43	34	46	27	37
3. Most important	14	11	12	12	12

In practice the most common means of differentiation among the 56 small

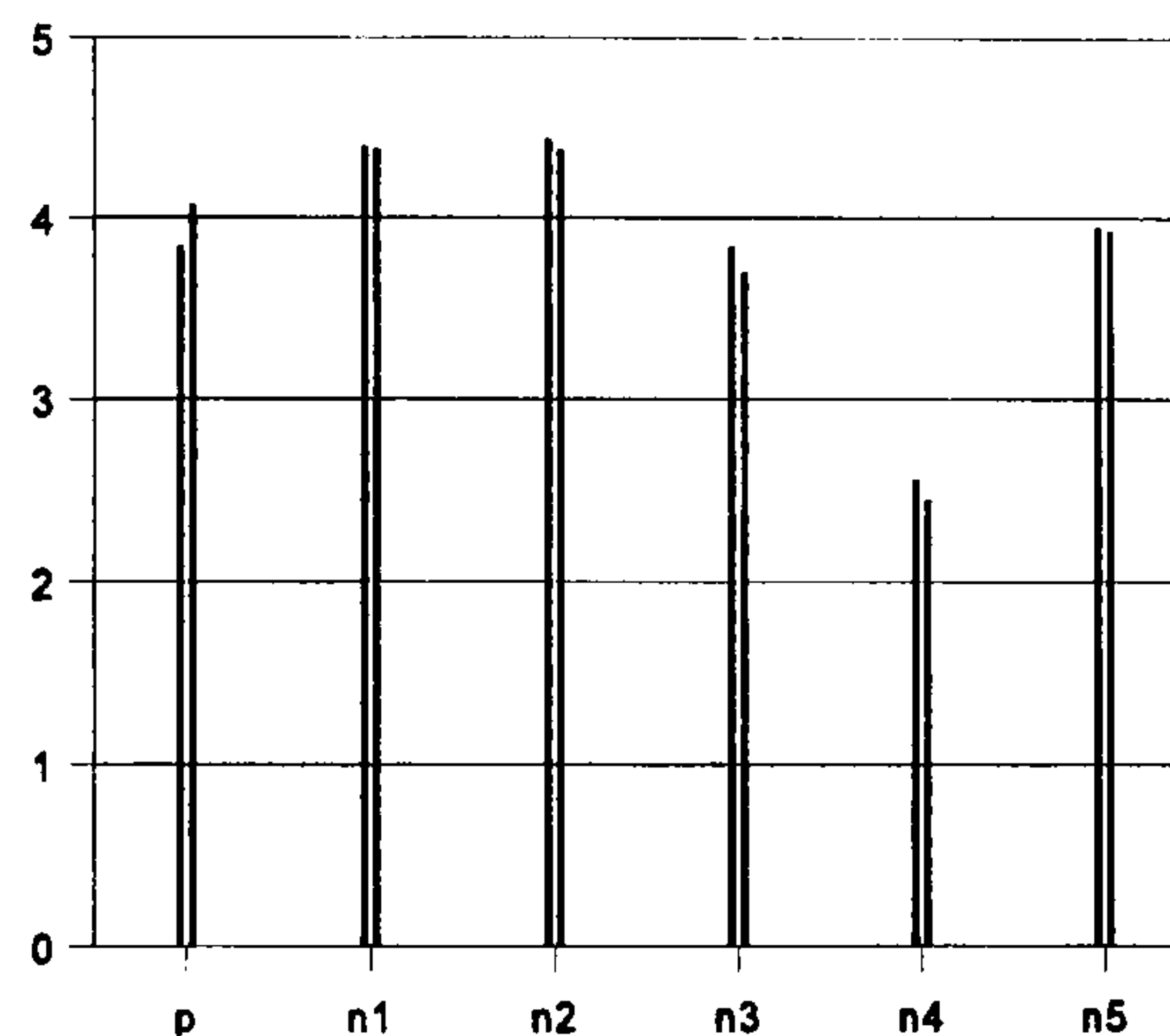
industrial firms studied has been altering physical features of their products (Table 2). The other two possibilities considered, becoming different by post-selling services, conditions of sale, by-products etc., or by advertising or distribution channels, have not had such an important role in differentiation. This finding is likely to be explained by the fact that many of the firms operate as subcontractors for other firms rather than produce final products for ordinary consumers. As some of the entrepreneurs explicitly remarked in the interviews, their "long-term contractors would hardly appreciate their intense advertising since in practice it would be interpreted as an attempt to find customers among their competitors". For competing subcontractors also many other features of producer-customer relationship, such as conditions of sale, are often fixed by the contractor. As to Hypothesis 2, χ^2 -tests suggest that there are no significant differences in the importance, principal type or means of differentiation between regularly exporting firms and other firms (Table 2).

Next I turn to observations based on the tentative approach based on the parameters of competition. Figures 3 and 4 represent the average product spectrums for the total number of 56 firms (Figure 3), and for the two aggregate sectors and by firms' export status (Figure 4) analyzed in 1992 and 1996.

Overall, surprisingly small changes in the meaning of different parameters of competition of the firms over the 4-year period have occurred. The averages for the meaning of reliability of delivery, quality and customization are in practice the same at both of the time points. The relevance of price has grown slightly

suggesting that price competition has marginally increased between the two points of time. On the other hand, the meaning of design and technical standard of a product have marginally decreased.

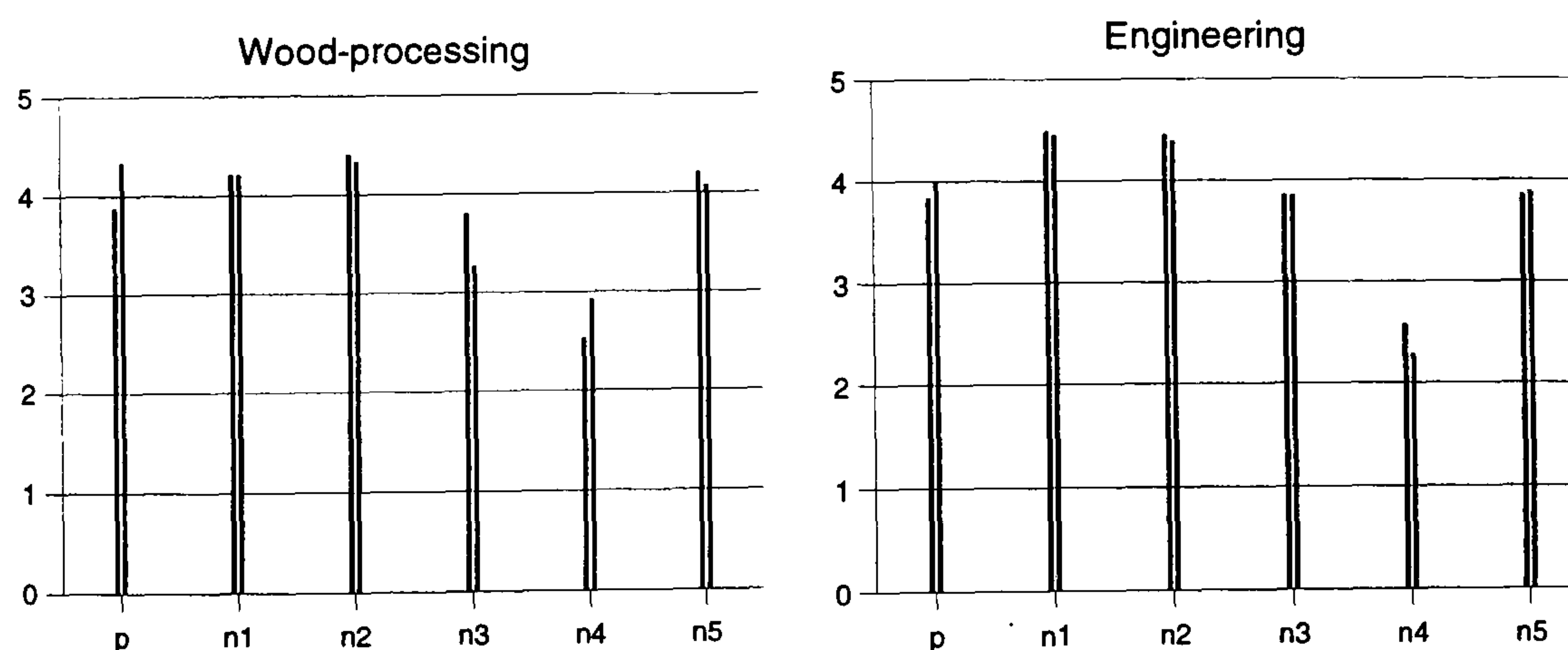
Figure II.3. Average product spectrums in 1992 and 1996, N=54-56. Left pillar: 1992, right pillar: 1996. Parameters of competition: p = price, n1 = reliability of delivery, n2 = quality, n3 = technical standard of a product, n4= design and n5 = customization of a product.

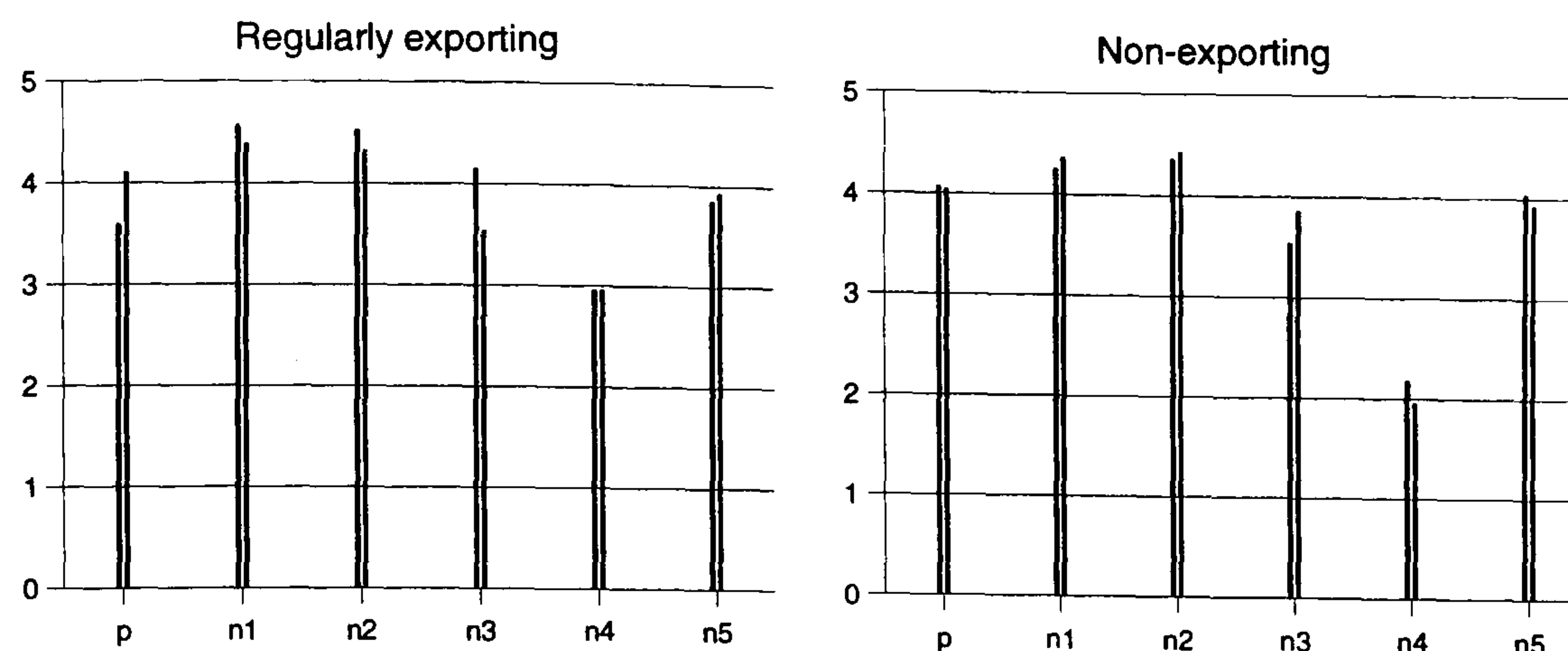


On the basis of Figure 4, it seems that both an increase in price competition, and a decrease in competition via the high technical standard of a product have concerned mostly regularly exporting, and on the other hand, wood-processing firms. Yet, on the basis of simple t-tests for differences in means, none of these inter-temporal changes in the meaning of different parameters of competition is

statistically significant. The design of a product has been more important for exporting firms than for non-exporting firms both in 1992 and 1996. No significant differences in the meaning of different parameters of competition were found between the wood-processing and engineering firms.

Figure II.4. Average product spectrums by sector and export status (left pillar: 1992, right pillar: 1996). Parameters of competition: p = price, n1 = reliability of delivery, n2 = quality, n3 = technical standard of a product, n4= design and n5 = customization of a product.





A scrutiny of the changes in the product spectrums reveals that there are altogether 19 firms (35 %) in which the changes in the parameters of competition satisfy the definition of horizontal change in product specification, and 34 (63 %) which satisfy the definition of a vertical change in product specification (see Definition 2 and Table 3; cf. Hypothesis 1). For one firm only are the two product spectrums identical, which points to the possibility that the comparatively large variation in the product spectrums are due to response bias (due to the fact that the spectrums are based on two independent subjective assessments by the managers). No less than 23 (68 %) of the 34 vertical changes in product specifications are cases where at least one of the parameters of competition have become less important, suggesting a lowering of product "quality". Eleven (58 %) of the horizontal re-specifications and 20 (59 %) of the vertical re-specifications further support differentiation - suggesting that in these firms price as a parameter of competition has become less important during the

period under examination.

Table II.3. Number of horizontal and vertical changes in the product spectrums of the firms

	Horizontal	Vertical; higher quality	Vertical; lower quality	No change
Change in specification; number of firms	19	11	23	1
Differentiation; number of firms	11	7	13	1

In general, these findings are in line with the view that vertical differentiation is especially important for manufacturing firms. However, suspiciously many of the vertical changes signal a lowering of quality: do these cases really signal gaining market power through relocation of the product, or are they due to easing of competition in general when the economy has started to recover from the depression? As to differences between the two main sectors, or between exporting and non-exporting enterprises, there are no statistically significant differences in the frequency of the three forms of product specification or differentiation between these groups of firms (cf. Hypothesis 2). Hence, in conclusion, these descriptive findings do not unambiguously support either one of Hypotheses 1 or 2.

Hypothesis 3 was evaluated econometrically. Variables used in the text and equations are presented in Table 4. Firstly, probit models were used to test whether observed vertical or horizontal changes in product specifications (denoted by h_i , v^1_i and v^2_i in the equations) are explained by changes in the intensity of competition (denoted by c_i), and whether these changes in product specifications have allowed firms to put less stress on price as a competitive parameter in their product spectrums (which is captured by the variable $sgndp_i$). Secondly, a relaxed form of the hypothesis, according to which the volume of changes in the product spectrums in general (denoted by N_i) can be explained by changes in the intensity of competition, was tested using a linear multiple regression model (OLS).

Table II.4. Definitions of the variables used in the text and equations

Left hand side variables:	
h_i	Horizontal product specification by the firm i (1 if this is the case, 0 if not)
v^1_i	Vertical product specification by the firm i , by improving "quality" (1 if this is the case, 0 if not)
v^2_i	Vertical product specification by the firm i , by downgrading "quality" (1 if this is the case, 0 if not)
$sgndp_i$	Sign of the change in the importance of price as a parameter of competition for the firm i between 1992 and 1996 (1 if negative, 0 if non-negative)
N_i	Sum of absolute values of changes in the non-price parameters of competition in firm i .

Right hand side variables:	
c^1_i	Expected change in the competitive situation of the firm in 1992-95, (based on an assessment of the manager in 1992: 1 if competition is expected to increase, 0 if no change or decrease is expected)
c^2_i	Occurred change in the competitive situation of the firm i in 1992-96, (based on an assessment of the manager in 1996: 1 if competition increased, 0 if no change or decrease)
c^3_i	Hypothetical change in the competitive situation of the firm i (number of the industry of firm i in the order of industries according to the pre-EEA level of non-tariff barriers to trade, by three-digit ISIC industries)
Control variables:	
p_i	Change in the proportion of own products of the turnover in 1992-95 (a proxy for change in the firm's position in the vertical production chain)
s_i	Aggregate sector (1 if wood-processing, 0 if engineering)
e_i	Export status of the firm (1 if the firm has regular exporting, 0 if not)

As to the right hand side variables, to achieve reliable results I tried three alternative ways of making changes in competitive conditions operational. Two of these, c^1_i and c^2_i , are based on the managers' assessments and the third one, c^3_i , on the level of non-tariff barriers to trade before Finland's membership of the European Economic Area in 1994. The managers' assessments concerned, firstly, an expected change in the intensity of competition in 1992-95 (*ex ante*, based on the 1992 interview), denoted by c^1_i , and secondly, a perceived change in the competitive situation during the same period (*ex post* in the 1996 interview), denoted by c^2_i . Values of c^3_i have been derived from the order of industries according to the level of non-tariff barriers to trade (source: Kajaste 1991). An industry group dummy (wood-processing or engineering), as well as variables

describing the change in the firm's position in the vertical production chain (change in the proportion of own products of the turnover) and a firm's export status (whether the firm is exporting regularly or not) were included in the equations as control variables. Also a control variable for whether a firm has been adjudicated bankrupt during the period under examination was tested throughout the analysis, but eventually left out from the results since this appeared to be highly insignificant in all the equations tested and lowered the fit of the models.

Now I turn to the equations tested in more detail. According to the main hypothesis (a rise in) price competition will be relaxed by differentiation. Thus, using the notation defined above it was expected, firstly, that for all j :

$$P_1[h_i = 1] = g(c_i^j, *) \quad (1)$$

$$P_2[v_i^1 = 1] = g(c_i^j, *) \quad (2)$$

$$P_3[v_i^2 = 1] = g(c_i^j, *) \quad (3)$$

where $P_1[h_i = 1]$, $P_2[v_i^1 = 1]$ and $P_3[v_i^2 = 1]$ are the probabilities of horizontal and the two forms of vertical changes in the product specifications, which are expected to be functions of changes in the intensity of competition and the control variables. In accordance with the hypothesis, c_i^j were expected to get positive coefficient estimates, whereas the null hypothesis in all the three cases took the form: observed vertical or horizontal changes in product specifications

are not explained by an increase in competition.

Secondly, in accordance with the principle of differentiation, a possible change in product specification should have allowed the firm to put less emphasis on price as a competitive parameter in its product spectrum. Using the agreed notation,

$$P_4[\text{sgndp}_i = 1] = f(h_i, v^1_i, *) \quad (4)$$

where the explanatory variables were expected to get positive coefficient estimates. The null hypothesis in this case insists that product specification horizontally or vertically through improving product quality is not significantly associated with relaxed price competition.

For estimable forms of the equations (1) - (4) the control terms were specified and intercept and error terms added. The probit models were then estimated using Limdep software. Selected estimation results are given in Table 5.

Table II.5. Estimation results

	Column 1 Dep. var. H	Column 2 Dep. var. V ¹	Column 3 Dep. var. V ²
Variable	Coeff (P[Z ≥ z])		
Constant	-0.363 (.58)	-1.303 (.08)	0.005 (.99)
CMCHB (c ²)	0.368 (.38)	-0.881 (.04)	0.286 (.47)
SECTOR (s)	0.324 (.42)	0.010 (.98)	-0.176 (.65)
EXREG (e)	-0.203 (.58)	0.664 (.12)	-0.237 (.50)
CV069 (p)	0.011 (.24)	-0.008 (.29)	-0.005 (.41)
N of observations	53	53	53
Log likelyhood	-32.60	-23.63	-35.49
signif. level	0.41	0.05	0.81
correct predictions	37/53	41/53	28/53

Column 4 Dep. var. SGNDP	
Variable	Coeff. (P[Z ≥ z])
Constant	-0.438 (.47)
H	0.127 (.76)
V ¹	0.260 (.60)
SECTOR (s)	-0.408 (.30)
EXREG (e)	0.463 (.21)
CV069 (p)	0.004 (.54)
N of observations	53
Log likelyhood	-34.09
signif. level	0.59
correct predictions	34/53

Dep. var. N	Column 5	Column 6	Column 7
Variable	B (Sig. T)	B (Sig. T)	B (Sig. T)
Constant	6.156 (.02)	0.873 (.73)	-0.862 (.55)
V279 (c^1)	-0.618 (.27)	-0.563 (.33)	
CMCHB (c^2)		0.610 (.46)	
BTOTRAD (c^3)		0.130 (.37)	0.236 (.02)
CV069 (p)	-0.005 (.74)	-0.007 (.62)	-0.003 (.84)
SECTOR (s)	1.926 (.02)	1.133 (.33)	
EXREG (e)	1.955 (.01)	1.933 (.01)	1.708 (.02)
Signif F	0.028	0.063	0.019
R square	0.20	0.22	0.18

The results given in the columns 1-4 (Table 5) show that only in the case of equation (2), where c_i^2 got an unexpected *negative* coefficient (significance 0.04; model significance 0.05), could the null hypothesis be rejected (i.e., the null hypotheses remained valid in those cases where the change in competitive situation of the firm was operationalized as c_i^1 and c_i^2). Consequently, any general or robust relation between variables describing changes in the intensity of competition and changes in the parameters of competition between the two points of time considered (1992-1996) cannot be verified in the present small sample. The above mentioned result is, however, conspicuous as it is completely contrary to expectations. The result suggests that those firms which had experienced an intensity of competition between 1992 and 1996 which had either decreased or stayed at the same level, have been more likely to raise the "quality" of their products. Sticking strictly to Hypothesis 3, this makes no sense.

However, the result points to the conclusion that the causal relation in the present data may run from differentiation to decreases in competition, rather than vice versa. Interpreted in this manner, the finding indicates that the firms have been successful in relaxing competition through re-specification of their products. This conclusion is, however, clearly rejected in the case of the equation (4) (column 4), which specifically tests whether those firms which have re-specified their products either horizontally or by improving quality have been more likely to experience a decrease in the meaning of price competition over the period of time. Thus, overall, there is no basis for such a strong conclusion in the present analysis.

Because of the fact that, as pointed out in the context of Definition 1, vertical and horizontal differentiation may overlap when using the characteristic approach to differentiation, I also tested a relaxed form of Hypothesis 3. According to this hypothesis the volume of changes in the product spectrums in general can be explained by changes in the intensity of competition. In other words, I no more made the (potentially artificial) distinction between the three types of changes in product specifications, but rather looked at the overall volume (number) of changes in the non-price parameters of competition. To test the hypothesis, different specifications of the linear regression model (5) were estimated by OLS:

$$N_i = \alpha + \beta_1 c_i^j + \beta_2 s_i + \beta_3 p_i + \beta_4 e_i + \epsilon_i \quad (5)$$

where N_i refers to the sum of absolute values of changes in the importance of different parameters of competition of firm i over the four year period under examination. The corresponding null hypothesis here naturally maintains that the number of changes in product spectrums are independent of changes in the intensity of competition.

The estimation results (for examples of the results, see columns 5-6 in Table 5) indicate that none of the three different specifications of a change in firms' competitive situations were found to be statistically significantly related to the volume of changes in the parameters of competition. Accordingly, the null hypothesis that the volume of re-specifications is not related to a change in competitive situation, remained valid. However, estimation of the equation (5) (without the sector dummy of course) for the two industry groups separately, yielded quite different results. On the basis of these tentative estimations it seems that the number of changes vary more according to changes in competitive situations in the case of the wood-processing firms than in the case of the engineering firms. Estimation of the equation for the whole sample without the sector control dummy even results in a significant positive coefficient for the variable c^3 (column 7). This suggests that firms in those industries that had a low pre-integration level of non-tariff barriers to trade have changed their products *more* than firm in industries with high barriers to trade, which again is a result directly contrary to my expectations.

Another interesting result is that, without exception, in all the three different specifications tested I found a significant positive coefficient estimate for the control variable for exporting status, e_i . Hence, it seems that the magnitude of changes in product spectrums between 1992 and 1996 is significantly greater in those firms that have been exporting regularly than in those which have not. These results lend robust support to Hypothesis 2, proposing that the differentiation behaviour of exporting firms will be different from the one of non-exporting firms, which did not gain support in the light of the descriptive analysis in above. On the other hand, the result is also consistent with the finding that firms in sectors that had a low pre-integration level of barriers to trade have re-specified their products more than firms in sectors with high barriers to trade. Arguably, exporting firms have been affected more than firms operating on the domestic markets by the large changes in the export price competitiveness of Finnish products during the period under examination, or by changes in the competitive environment of firms implied by the ever closer economic integration of Finland to the European Union.

On the other hand, as mentioned, the control variable for whether the firm has gone into a bankruptcy during the period under examination remained insignificant in the analysis and only lowered the fit of the models. In terms of volume of changes (N_i) there are on average only slightly larger changes in the product spectrums of the failed firms than in those which survived (the means are 3.6 for surviving and 4.0 for failed firms). This suggests that a bankruptcy does

not need to dramatically influence product characteristics if the firm was soon re-established.

Overall the above econometric analyses suggest that the impact of a change in competition on the differentiation behaviour of firms is quite ambiguous in the present analysis. In addition to the above mentioned problems - endogeneity of competition, and the problem in differentiating between horizontal and vertical differentiation - there are at least three other reasons that may have caused the lack of a robust relation between the intensity of competition and differentiation by firms in the present context. Firstly, it may be simply the case that the sample used is too small and heterogenous in the sense that the firms represent very different industries inside the very coarse separation into two aggregate industry groups, wood-processing and engineering industries. Secondly, I have assumed that no significant changes have taken place in tastes or incomes of consumers over the period under examination. This may not hold good especially in the light of the very deep depression in Finland in the first half of the 1990's. Thirdly, excessive variation in product spectrums due to response bias may be an especially serious problem in a small sample.

4.4. A case study

The tentative statistical analysis above makes evident the limitations of both the

data and the specific approach used to analysing differentiation behaviour of firms. In this chapter, the differentiation behaviour is analyzed through a case study of firms. One can argue that the case study method of research provides a powerful tool for analysing differentiation behaviour of firms because:

1. The theory seems inadequate to predict the behaviour of individual firms especially when there are many strategic options available for firms as in the real world. This makes the proposing and statistical testing of hypotheses on the differentiation behaviour of enterprises quite frustrating, and suggests more in-depth analyses are useful for studying product differentiation. The case study method has been argued to be ideal for studying this kind of research topics where existing theory is inadequate (Chetty 1997). In smaller firms, which this paper focuses on, firm-specific factors are likely to be emphasized due to scarcer resources and decision-making highly concentrated to an owner-manager.
2. Differentiation by firms, as well as independent variables that by assumption influence the differentiation by firms, are inherently difficult to measure quantitatively. A central example of such a (seemingly) independent variable is the intensity of competition, especially taking into account the fact that competition can take many forms: price, quality, sales, market share, advertising, or many of these together. Changes in the intensity of competition perceived by a firm are directly influenced by the firm's and its rivals' actions (including differentiation which induces a problem of endogeneity), and by many other

factors (such as changes in threat of potential entry, substitutes, or in demand in general). Further, it is commonly known that changes in product locations may be motivated by an aim to block potential entry, rather than a desire to soften actual price competition.

3. Related to the first point, the case-study method can be used to create and extend theories, and not just to test them. The existing theories of product differentiation seem to be built on considering a group of firms rather than considering an individual firm, and thus cast relatively little light on the decision-making processes of firms in the real world. It is notable that this relative underdevelopment of an individual firm's point of view has also been argued to apply to microeconomic theory in more general (see Kay 1991). By the help of the case study method of research, which allows decision-making processes and causality to be studied in detail, the theory can be developed in this direction.

In essence, the present explanatory study aims to use the case study method to produce theoretical implications, i.e., to develop theory rather than to test it. Selection of cases for theory building relies on theoretical rather than statistical sampling, and it is reasonable to choose very different cases in which the object of interest is clearly observable (see Eisenhardt 1989, 537). In the present study, the four cases have been chosen from different levels of vertical production chains (Table 6): Firm A is a subcontractor (construction industry), B a producer of semi-finished products (manufacture of wood products), C a producer of

components (manufacture of fabricated metal products), and D a producer of final products (manufacture of transport equipment). A common feature of the firms is that differentiation is, or has been at some earlier stage, a strategic aim of the firms. Three of the firms (A, C and D) have gone through bankruptcy during the deep recession of the 1990's in Finland. The causes of the failures linked with the changes in the product strategies resulted make these firms attractive targets for an analysis. Firms B, C and D export their products, whereas A operates on the domestic markets only.

Table II.6. The four firms

Firm	Product	Success over the depression	Exports
(A) subcontractor	metal profiles for frontages of buildings	failed	no
(B) producer of semi-finished products	sawn and planed wood	survived	yes
(C) producer of components	power transmission components	failed	yes
(D) producer of final products	tanks for transportation of inflammable liquids	failed	yes

Case study research can involve qualitative data only, or quantitative only, but it is usually beneficial to use both (Eisenhardt 1989, 538). The major sources of

evidence for the present study are the firms themselves. According to Yin (1994, 80), the strengths of this method of data collection are, firstly, that interviews are insightful as they provide perceived causal inferences, and secondly, that they are focused on the case study topic. Weaknesses, on the other hand, are potential response bias, bias due to poorly constructed questions, inaccuracy due to poor recall, and the fact that interviewees may tend to say what the interviewer wants to hear. For the weaknesses it would be preferable to use multiple sources of evidence, although Eisenhardt (1989, 537) does note that some investigators successfully use only one data collection method. In the present study, most of the information used in the study is based on two separate interviews of the managing directors of the firms in 1996 and 1997. The material collected in 1992 and 1996 was used in designing the interviews in 1997 (the 1997 interviews were customized, in-depth interviews; for an example of the interview agenda, see Appendix 2). The accuracy of the information collected in 1997 was also compared and checked against the information gathered earlier. Other sources of information have been direct observation by visiting the firms the three times, product brochures and other written material obtained from the firms (such as the uncited numerical information used in the study). The contents of the stories presented in below has also been confirmed by the managing directors. In the present study, the cases have been presented anonymously and unidentifiably at the managers' request.

The analysis uses so-called explanation building technique, since this better suits

the nature of the present data material and the goal of the study to produce theoretical implications rather than simple pattern matching, time-series analysis or program logic models (see Yin 1994, 106-119). In this technique the aim is to analyze the case study data by building an explanation about the case by stipulating a set of causal links about it. These links may be complex and difficult to measure in any precise manner. Ideally, the explanations reflect some theoretically significant propositions. Initial theoretical propositions about causality can be developed by asking questions "how" and "why" (Chetty 1997, 80). On the basis of the literature survey in Section two and the analysis thus far in this chapter, the main questions reflecting this study's theoretical underpinnings are the following. Firstly, why and how have the firms striven to become different from their competitors? Secondly, why and how has the differentiation strategy been successful, and why may it have failed? Thirdly, why may differentiation from competitors be difficult or unprofitable? Fourthly, why may vertical differentiation be emphasized in firms that do not produce final products? Fifthly, why and how has economic integration influenced the product specifications and differentiation aims by the firms?

The following stages proposed by Eisenhardt (1989) were used to reach the final propositions. Firstly, both within-case analyses (describing and explaining the cases) and cross-case analyses (listing differences and similarities between each pair) were used in the search for tentative hypotheses. These hypotheses were then compared systematically with the evidence on each case in order to evaluate

how well they fit with the data, and revised accordingly. The revised hypotheses were then again compared with the evidence, including this time more details of the cases, and so forth. This iteration was stopped when theoretical saturation was reached, i.e., the propositions could no more be sharpened by the data and they were verified by the case data. The final propositions reached (presented in Section 5) were then compared with existing propositions in the literature Section 2 to increase their validity. The discussion and implications of the findings for theory are presented in Section 6.

One more important note that concerns the generalization of observations of a case study has to be made before going into the case study reports. The logic of a case study is very different from that of a statistical analysis. Since cases are not sampling units nor likely to be representative cases, a case study does not aim at statistical generalization but to theoretical generalization (Yin 1994, 34). Put differently, with the case study method, the investigator aims to expand and generalize theories and not to enumerate frequencies (see Chetty 1997, 74). For this reason, the final propositions should not be taken as features of a population of small firms, but as theoretical suggestions only (that have been verified as possible in a small industrial firm).

4.5. Case reports

4.5.1. A subcontractor (Firm A)

Firm A operates as a subcontractor for the domestic construction industry producing different types of metal profiles for frontages of buildings. In the mid-80's, where my analysis begins, the firm's (or more precisely its predecessor's) competitive advantage was based on good product quality and the firm's position as a forerunner in supplying total frontage structure service. The idea of this total service, which can easily double the value of a contract, is to offer installation and the needed subcontracting, such as glazing, providing metal fittings and finishing in addition to the basic profile structure. For building companies buying a bundle of services from a supplier instead of making different contracts with all suppliers is a way to reduce their own risks. The operations of the firm were clearly profitable till the end of the decade, although the firm did not expand much in terms of the real value of the turnover⁴⁴ or the number of employees.

In a longer term, the firm was not, however, able to sustain its competitive advantage. Loss of the competitive advantage has resulted from several different negative influences on the firm after the turn of the decade. Firstly, some of the

⁴⁴ I have used industry-specific price indexes to deflate.

firm's competitors (which are about 20 in total) had also started to supply total service similar to that of the firm. As the number of firms offering similar products increased, the price-cost margins from the contracts won became lower. The firm did not respond to the rivals' actions in any clear way by changing its own product or services, but relied on its longer experience as a supplier of the bundled service. Secondly, between the years 1990 and 1993 the volume of newbuilding fell in Finland for about 55 per cent, which was reflected in a dramatic drop in the demand for metal profiles for buildings. A slow recovery of the construction started no sooner than in 1994-95. According to the manager's perception, the strong negative demand shock further intensified price competition in the markets such that contracts were won even by bids that hardly covered more than fixed costs of firms. Thirdly, the firm ran into debt as a result of trying to support its product strategy based on total service by backward integration by acquiring a window factory. As a consequence of these difficulties, creditors of the firm adjudicated it bankrupt in 1994.

Soon after the bankruptcy, the present firm was established in the same production plant by the personnel of the failed firm. Competitor firms had bought the old machines and equipment from the bankrupt's estate and thus the firm had to procure new machines. It had turned out to be difficult to get investment loans for the new enterprise, and thus it started its operations with a markedly smaller invested capital than the predecessor. For this reason the machinery acquired was not as good as the earlier one, which was reflected in a lower quality of products

and loss of competitiveness. The competitiveness of the firm also suffered from loss of economies of scale as the volume of operations diminished for about 60 % in the bankruptcy (in terms of the number of personnel).

The earlier basis for competitiveness, offering total service, has also been abandoned to a large degree. This is mainly due to the fact that the lower price-cost margins are no longer high enough to compensate for the higher risk related to providing a complex bundle of services in comparison to just the basic frontage structure. The firm's present position in the markets characterized by a steeply fallen price level is well described by the entrepreneur's humorous expression: "One cannot win a contract without making a mistake in the calculation of costs". According to him, the price-cost margin of a typical contract has fallen for about 5 percentage points from the situation in the late 1980's. Despite a 10 per cent growth in terms of the turnover and number of employees in 1995-96, the net profit has been close to zero.

In terms of the different raw-materials used (50 % aluminium, 50 % steel) the developments of the 1990's have not had any influence on the product assortment of the firm. The use of different raw-materials is being determined primarily by the demand, since there is no marked difference in the profit margins gained from the different materials. On the other hand, the new firm has turned to markets outside the local region more than its predecessor, and aimed also at indirect exporting to Russia. The products offered to export building projects

have been special products including several domestically subcontracted services. Yet to date the exporting plans have not succeeded.

Differentiation in the markets is difficult because these naturally emphasize price competition. Firstly, since the products are technically and by their outward aspect produced according to an orderer's (actually an architect's) instructions, horizontal differentiation of the physical product itself is in practice impossible. Neither has advertising been seen worthwhile in the firm since the markets operate under the principle of competitive bidding: with very rare exceptions the lowest bid wins a competition between otherwise similar contract offers. For this reason, differentiation by supplementary services, such as offering installation and glazing in addition to the physical product itself, had been seen by the firm's predecessor as the most plausible means to become different from competitors. Information on the profitability of this strategy was based on the relation of lost and won bids, and on the price cost margins of the contracts built.

Secondly, price competition is intensified by the way the markets operate. Typically a builder orders the building from a building company that has won a sealed bidding for the building contract, which then arranges a competitive bidding for profile suppliers. Normally there are about 5-10 profile suppliers competing for a contract. But profile suppliers also use subcontractors which still may themselves use subcontractors. In this situation, it is in the interest of all the firms down the production chain to reduce their costs after the price has been

fixed in the competitive bidding at each stage (typically firms, especially construction companies, may try to reduce their costs by using cheaper materials and less expensive subcontractors than was initially suggested to the builder, or by calculating "shadow prices" for contracts offered to suppliers to make them to lower their bids). Put differently, because the product of a profile supplier is not purchased by the end user (the builder) the meaning of price as a parameter of competition will be emphasized. This is in line with the view of the manager that the demand is price-elastic for the firm (a 5% decrease in competitors' prices would have a greater than 5% impact on the amount sold by the firm). In public, the excess price competition in the industry has been argued to lower the quality of building in Finland (Helsingin Sanomat 1997).

The direct impacts of the economic integration on this relatively small firm's operations have so far been non-existent. The integration developments have not increased competition in the form of new foreign competitors or increased imports, since the firm hardly ever competes for contracts large enough to interest foreign firms. Neither have the integration agreements implied any pressures to adapt the product physically.

4.5.2. A producer of semi-finished products (Firm B)

The firm used as an example is a modern independent sawmill. The main

products of the firm are sawn and planed wood. One tenth of the turnover consists of by-products, such as chippings and fuels. From the late 1970's the firm has striven to become different from sawmills producing bulk products by marketing its products directly to industrial end users instead of dealers and wholesalers, and by specializing in sawing of certain kind of wood and size of logs. Instead of fewer bulk products, the firm produces today thousands of "different products" according to, for instance, different kind and quality of the round wood, or shape, measures, protective treatments, levels of dryness or ways of packaging and transportation of the sawn and/or planed wood. For the industrial end-user it is essential that in this way the amount of waste wood in further processing of the raw-material, say to furniture, becomes less, and that it does not need to take the risk of storing the material when the deliveries are made on a regular, even a weekly basis. The firm, for its part, has benefited especially from the fact that focusing on the industrial end-users has lessened fluctuations of the demand.

The firm operated as an ordinary sawmill exporting bulk products before it started to develop the deviating product strategy in the end of the 1970's. At that time, the firm was completely dependent on the given international price level. Consequently, the profitability of operations varied strongly due to great changes on one hand in the demand for construction material in Europe and on the other in the price competitiveness with respect to the main competitor countries, Sweden in particular. The starting point for the differentiation and specialization

was the type of the local round wood. This is most suitable for furniture and board industries, and consequently the management of the firm deduced that it would be possible to refine the wood profitably further already at the sawmill. To gather information on the end-users' requirements for their raw-material, the firm started to search for direct contacts with foreign industrial companies further-processing wood, instead of just selling standard products to dealers or wholesalers. Through these contacts the firm gradually created for itself a perception of what would be required to become "a subcontractor for manufacturing industries". The firm faced no marked competition with its new thinking since in practice there were only exporters of bulk products operating in the markets at that time.

The fact was that with an ordinary production installation it would not be possible to export fast and customized deliveries. Thus, essential for profitability of the strategy was that, firstly, efficiency in production, as well as reliability and rapidity of deliveries could be markedly raised. Secondly, the firm would need to create firm customer relations with industrial end users. To improve efficiency in production the firm started comparatively large technological investments into production installations in the beginning of the 1980s. The production was radically automatized to improve productivity. Over the last decade, yearly net investments into machinery and required new facilities have been up to 10 per cent of the turnover. As a result of the development, the number of personnel has diminished by 46 per cent, while the turnover (in real terms) has risen by 65 per

cent over this time. At the same, the proportion of labour costs in turnover has decreased by 20 per cent. According to the manager this increase in productivity has been crucial for the competitiveness of the firm.

The second element of profitable differentiation was to create new customer relations. To achieve this goal the firm has aimed at direct personal contacts with end user companies. Relations to customers have firmed up not only through customization and high quality of the products, but also by increased reliability and flexibility in deliveries. As the business manager neatly put it: "A direct transportation in a closed long-distance truck is the best way to tie a West-European customer". On the other hand, advertising has not been seen as very profitable. In the future, however, the meaning of non-measurable values and consequently the meaning of advertising is expected to increase due to growing importance of environmental values and product quality schemes.

Since the beginning of the 1980's, half a dozen other Nordic sawmills have started to pursue similar product strategies targeted to industrial end users other than the firm in hand. The technological solutions, however, are not necessarily similar nor the specialization taken as far as in this firm. Differentiation by the firm is also strongly supported by the local raw-material. This is because each tree species grows on each latitude in its own distinctive manner, influencing thus its processing properties and suitability as material for furniture, for instance.

Although the product strategy has clearly been successful, it is very difficult to get rid of price competition in the markets for sawn and planed wood in general. Differentiation is opposed especially by standardization economies: It is in practice impossible to deviate from, say, certain standard measurements since there is no demand for such non-standardized material. In this sense there is little such in the product itself that could not be reproduced by a competitor.

Competition is still strongly dominated by price especially in the domestic markets. In the export markets, where the customization and the degree of working up of the products are higher, customer relations are more established and price competition less intensive. The greatest benefit from the change in the product strategy has not, however, been an increase in price-cost margins, but the fact that the strategy has helped to subdue heavy demand fluctuations that are typical for the industry. The decrease in demand for Finnish sawn wood in 1995 (mainly due to decrease in price competitiveness in relation to Sweden), for instance, did not influence the running degree of the sawmill in the way similar situations have done in the past. The strategy has thus made the demand easier to predict and the whole operations of the firm more methodical, which then have contributed to, for example, acquiring outside financing for the firm.

An indication of successfulness of the product strategy has been the firm's stable exporting operations. The share of exports of the growing turnover of the firm rose for more than 20 per cent in the first half of the 1990's. Undoubtedly, this growth was initially boosted by the improvement in price competitiveness due to

devaluation of Finland's Markka in 1991-92. Since then the price advantage has been lost (due to devaluation of the currency of the main competitor Sweden, and because Markka itself has gained back its strength), but despite the weakened price competitiveness, the share of exports of the total turnover of the firm has remained at the higher level.

The firm is very dependent on export markets as more than half of the production is being exported each year. West-European markets especially are crucial for the firm. Against this background, the economic integration of Finland into the EU as such has had a surprisingly small influences on the firm's operations in the 1990's. Import competition has not increased, and the few acquisitions of Finnish sawmills by foreign investors after the deregulation have not had any marked implications for the competitive situation in the markets in Finland. More than these the competitive situation has been affected by changes in the direct transport subsidy due to harmonization of competitive laws with the EU. The most significant menace of the integration development, however, is the possibility that Sweden will not join the monetary union together with Finland, and would thus sustain a chance to upgrade competitiveness by devaluations in the future. So far, however, the influences of the economic integration in the 1990's have been perceived as positive in the firm: the agreements have secured for the firm a free access to its main markets in Europe into the future, and increased exporting possibilities to some extent. On the physical characteristics of the products the integration agreements have not had any significant direct

influences.

4.5.3. A producer of components (Firm C)

Firm C is a high-class engineering works that produces mechanical power transmission components. From the mid-80's the markets for transmission components in Finland have faced increasing import competition from Asian countries, which has for its part forced the firm to renew its product strategy. In particular, the firm has differentiated from the low-quality imports by specializing in high-quality special components, and diversified production by starting to produce machine parts to order.

Over the last ten years period, the firm has gone through several marked changes of ownership that have for their part also had an influence on the product strategy of the firm. In the mid-80's the firm was jointly owned by a Finnish and an English company. Its market share in the first installation industry was in most products very high (30-70 %), whereas the share of markets for subsequent installations (i.e., replacement parts) was much lower (15-30 %). The firm, which was small but had a strong grip on the markets in Finland, would have fitted perfectly a giant Swedish manufacturer's expansion strategy. Although the negotiations about the acquisition were frustrated, the partners could agree on dealer cooperation. With the help of the strong and established dealer network of

the Swedish company the firm's share of the markets for replacement parts grew rapidly in 1986-87, despite ever increasing importing of components from Asia.

At the turn of the decade the economy dived into the deep recession. The firm was oppressed by debts from two subsidiary engineering shops that had been established during the boom and had to be run down when the demand collapsed. When Finland's Markka devaluated substantially in 1991-92, the real value of the debts, part of which had been loaned from abroad, grew intolerably. At this stage, the marketing company and the brand name of the firm were sold to the Swedish company. The firm was adjudicated bankrupt and re-established to produce components for the Swedish company. In 1995, however, the management of the firm decided to break away from the marketing cooperation with the Swedish company, since when the firm has marketed its power transmission components independently again.

The other important factor that has influenced the firm's product strategy has been the increased import competition from the East. Not only the markets in Finland, but in Europe in more general, have been shaken by the imports. Since the import competition became a serious threat to the firm in hand, it has intentionally changed its product strategy mainly in two ways. Firstly, the firm started to specialize in rapid, short series and specialized transmission components. Secondly, production has been diversified by operations as a subcontractor.

The transmission components imported from the East are generally of lower quality but are also significantly cheaper than those produced in the Western Europe. Because of this fact, in its new product strategy the firm aimed at producing high quality and short, rapidly supplied series of special components. As a matter of fact, this seems to have been the only viable option for the firm, since "no robot can help if the price for the imported products falls below the cost of raw-material for the firm" (Manager, 1997). Most essential in the quality of the components is the technical quality, represented by the exactness of measurements, hardness and finishing of the outer face, in addition to quality of the raw-material. Rather surprisingly, the outlook of the product is also very important. This is a factor that had often come out with poorly finished imported components. Factors of quality that are harder to imitate are the firm's knowledge in using special materials, and non-material values such as the firm's image as a reliable supplier (time of delivery, stability in pricing, credibility). The firm has started to create the company image again by advertising.

Although the firm has not started to compete against the imports with price, the meaning of price as a parameter of competition is still crucial for the firm in both of the markets for transmission components. Sticking to high quality has been the only reasonable option for the firm, since lowering of product quality would not decrease costs significantly. Neither has shifting of production to countries with significantly lower labour costs, such as Russia or Estonia been considered as a viable strategy. This is because the operations in these countries have been seen

to involve too high risks and harm the firm image. Instead, like some other European transmission manufacturers, the firm has imported transmission components from East (Russia) reselling these both to the domestic and European markets.

Due to partial loss of the markets for transmission components, the firm has diversified production by starting to produce machine parts to order for large exporting enterprises in Finland. The volume of these operations grew rapidly especially in the beginning of the 1990's: in four years from 1991 to 1995 the share of subcontracting of the total turnover of the firm has grown for more than 40 percentages. Because of the financial difficulties in the early 1990's, investments in machine tools and equipment by the firm had decreased leading to losing of an earlier technological advantage over standard engineering works. Consequently, the firm aimed at improving other factors of quality than technology to differ from competitor works in subcontracting business. Notably, the firm adopted the so-called partnership-principle in its relations with customer companies, which aims at forward-looking and safe subcontracting relations for both partners. In this kind of production relation the quality of the firm's product is determined solely by its competence in production services, because the responsibility for product development is with the contractor. The firm has to be able to, for example, customize everything from handling the orders to packaging and transportation of the machine parts, as well as willing to present all the relevant information on the economic situation of the firm for the customers to

sustain credibility as a reliable long-term subcontractor. Most problematic for the firm in the partnerships has been the adaptation quickly enough to fluctuations in demand. This is because a typical partnership contract is for supplying certain parts for a predetermined time period, but the actual demand is determined on a very short term basis.

Concentrating on the new market segment seems to have been for the firm the only way to survive in the markets for transmission components. After the first import shock in 1985-86, the turnover of the firm (excl. the two subsidiaries) even continued to grow for about 10 per cent a year until the great depression hit the markets after the turn of the decade. However, after the bankruptcy, the growth has been based on the operations as a subcontractor, whereas the share of component production of the turnover has decreased accordingly. It is hence very difficult to evaluate the success of the product strategy. Today subcontracting operations are the firm's main source of business (representing for more than 60 per cent of the total turnover of the firm), and production of transmission components is used to level changes in the demand for subcontracted machine parts. On the other hand, only half a dozen firms that produce roughly similar transmission components in the Europe have survived independent.

According to the manager most important factors opposing differentiation in the markets for transmission components are the technical standards. On the other hand, technical similarity and compatibility of the components has also been

used by the firm as a marketing measure when striving to penetrate the markets again independently. In the earlier situation, when the firm had a marked share of the markets in Finland, marketing by the firm aimed at making clear differences between the firm's and competitors' products in order to make subsequent installation of competitors' products less attractive. In the subcontracting business competitors are followed in certain ways of action.

The firm is also exporting power transmission components, but the share of exports of the total turnover of the firm is only marginal. In most cases the export deliveries are unsolicited orders by old customers. Exporting used to be more marked in the 1970's (when price competitiveness was not a problem), but as a consequence of the alliance with the English company, the firm concentrated in its exporting on the markets in Sweden. Today the exporting possibilities are limited by the low tradeability of the rapidly supplied specialized components and the lack of price competitiveness in standard products.

The direct influences of the European integration on the firm's operations have been minor in the 1990's. This is because of the fact that most of the technical standards concerning power transmission components in Europe had been already harmonized before Finland became a member of the European Union. Neither have customs regulations changed markedly from the point of view of this firm.

4.5.4. A producer of final products (Firm D)

The fourth firm subject to a closer investigation produces tanks for transportation of inflammable liquids. The firm was established when employees bought out operations of a part of a larger conglomeration of enterprises that was adjudicated in bankruptcy in the early years of the 1990's. From the beginning it has strongly aimed at differentiation for increased competition in the domestic markets. In addition to the production of tank structures, the firm overhauls, mends, alters and sales at second-hand tank trailers, and also sells spare parts for these as secondary activities.

The hauling equipment group in which the firm belonged to started to become economically troubled at the turn of the decade. Entry of new competitors on one hand and the recession on the other, had made price the central parameter of competition in the markets. The tank trailer division was taken into this price competition, yet there was no real basis for such price competitiveness. From 1991 to 1993 the total turnover of the whole hauling equipment group fell (in real terms) for about 60 per cent. The tank trailer division, on the other hand, grew in terms of the turnover, but as shown by the books the operations were clearly in the red. The group was not reorganized quickly enough and a failure was inevitable.

Some of the employees of the failed tank trailer division considered it

economically healthy despite the bankruptcy of the conglomeration, and decided to continue its operations as an independent limited company. To keep the know-how in the firm, the new management purposely employed all the earlier skilled labour force, although the volume of operations of the enterprise decreased in the first year (in terms of the turnover) for about 20 per cent from the situation as a part of the group. Entry of new domestic and foreign competitors in the markets in Finland had increased competition and it was evident in that situation that the product strategy had to be renewed in order to gain competitiveness. As starting points for the strategy became, firstly, differentiation from other Nordic tank trailer producers, and secondly, internationalization. In addition, the firm simplified the product mix by dropping out of production of tanks for transportation of foods and chemicals and concentrated on the hauling equipment for transportation of inflammable liquids.

The differentiation strategy of the firm relies strongly on physical characteristics of the products. The substance of the product strategy has become to produce customized, efficient, safe and ergonomically right designed tank lorries and trailers. Essential in the differentiation are high quality and technical details, as well as finishing and appearance of the lorries and trailers. The efficiency of the vehicles is mostly dependent on the time consumed in loading and unloading of the tanks, which can be minimized by correct design and dimensioning of the pipe systems and pumps, as well as by correct logistics of the total pneumatic system of the lorries. Loading and unloading times are essential for the

efficiency, since the hauling equipment today are heavier but less in number than earlier, and because loading and unloading can easily take one third of the 24 hours daily hauling time. It is also very important that the risk of a human error in the use of the lorries is minimized (for instance, to minimize the risk for mixing of different liquids in the tanks since these have appeared to be very expensive to clean). By the right ergonomics of the vehicles the firm aims at improving safety at work and the working conditions of drivers.

Another important difference to the other Nordic companies in the branch is that the production process of the firm is 100 per cent manual. Because of the deviating production process, the turnaround time in the production is much longer in Firm D than in the competitor firms. Recently, the firm has tried to shorten the turnaround time by increasing flexibility of production by using components produced in series in certain stages of work. As to marketing practices and terms of sale, the firms in the industry are very similar to each other. However, the firm in hand aims at documenting the technical solutions of the product better than competitors to make service and repairing of the vehicles more convenient for a customer.

The firm does not have a research and development department but the product development is based on the competence and long experience of the personnel in the branch. Information and feed-back acquired from the most important customers, petroleum companies and private lorry drivers, on the requirements

on safety at work and efficiency of the vehicles are essential in developing the products. The requirements are tried to apply individually in the firm such that the end product would not only cope with the technical requirements, but would outperform competitors' products also by design and appearance.

The main purpose of the product strategy is to differ from other Nordic tank trailer producers that pursue similar customized product strategies. Three or four of these companies are marked competitors for the firm. In comparison to the products of these, the product of the firm is an expensive one. However, there is a segment in the markets that demands high quality and tailored tank lorries and trailers, and is willing to pay for the quality difference. On the other hand, the firm faces not much other competition: because of some differing technical regulations and especially regulations concerning size and weight of the hauling equipment, the markets in the Nordic countries are quite isolated from the European standard tank lorry markets. In the Western European countries, a typical maximum gross weight of the trailers is between 40 and 48 tons, whereas in the firm's main markets in Sweden and Finland a 60 tons maximum weight limit is still used. Consequently, the heavy hauling equipment in these Nordic countries deviates clearly from the standard semi-trailers used in the rest of the EU. It is mainly for this reason that the markets in Sweden and Finland have not interested the large European (mainly Belgian and German) tank trailer producers.

The other important component in the firm's strategy has been internationalization. The first foothold in export markets was created already as a part of the hauling equipment group, when growth aims and the domestic depression made the group to think of expanding the marketing of the tank trailers beyond the domestic markets (as some of the Nordic competitors had done). However, after a few deliveries the firm withdrew from the export markets due to a lack of price competitiveness. Export development was started forcefully again by the re-established firm. Now, with the re-specified product, the firm entered successfully markets in Sweden and the Baltic countries. In a few years, the export markets have indeed become the most important source of business for the firm: In 1996, more than two thirds of the turnover already consisted of export deliveries. Competitiveness in exporting is mainly based on differentiation as in the domestic markets, since the firm is not able to compete with price in the export markets either. For example, in contrast to other domestic exporting firms, the firm uses the exported vehicles technical solutions that are based on locally produced components in each export destination to make the servicing and repairing of the vehicles easier for the orderer. The success especially in the export markets has led the firm on a growth path again: in 1995-96, for instance, growth in terms of the turnover was no less than 30 per cent, and in terms of the number of employees, 15 per cent a year. At the same time, the operations have been established by investments into production facilities.

Most obvious forces opposing differentiation inside each country markets are the technical regulations. The major oil companies also demand certain technical characteristics and equipment, although these may differ between the companies. Some of the safety regulations are quite hard to meet which makes the starting of similar production without earlier experience in the industry difficult. As an example, welding seams have to pass a fluoroscopy test to detect production failures.

So far the economic integration of Finland into the European Union has not had any significant direct influences on the operations of the firm, since many crucial technical standards in the industry have not been harmonized. Discussion on the harmonization of the maximum weights as well as other technical standards however continues and at least partial harmonization is expected in the future. The manager anticipates that it would be very hard for the Nordic companies to survive in price competition with the large European standard trailer producers, in the unlikely case that all technical regulations were standardized in the EU: the price difference between a customized and a standard tank equipment may easily be one fifth of the price of a delivery. Actually, a likely reason for the increased competition in the Nordic markets is that the Nordic companies have tightened their grip on their traditional markets because of the anticipated increase in competition from the rest of the Europe. On the other hand, a certain amount of harmonization of the technical regulations would make exporting easier for the firm D.

5. Observations and propositions on the differentiation by the four firms

Table 7 summarizes some observations on the motives, practical means and success of differentiation in the four firms. The findings are largely in line with expected patterns in differentiation behaviour of firms (Section 2), but on the other hand bring out points that have been considered less in the literature. The most obvious proposition on the firms' behaviour is that some form of price competition has indeed been a motive for differentiation in all the four firms. However, the most important benefit actually gained through the differentiation need not be an increase in a price-cost margin, but may follow from the stabilization of demand fluctuations as a result of increased loyalty by customers, as the case of Firm B shows. In the cases of Firms B and C it is hard to distinguish between the benefits from specialization and the benefits from differentiation by firms, since in practice these aims may be mixed in a firm's strategy. Differentiation aims may also be influenced by the firm's position in the markets. For example, a firm may find it profitable to imitate competitors when it is trying to penetrate markets but to differentiate when it already has an established position in the markets, as the case of Firm C shows.

Table II.7. Information on the differentiation of the firms

Firm	Motive for differentiation	Means of differentiation	Success in brief
A	domestic price competition	bundling services into the physical product	lost the competitive advantage through several different negative shocks and imitation by competitors
B	heavy demand fluctuations/ price competition	selling directly to industrial end users instead of wholesalers or middlemen; specialization into certain type of wood and size of logs	smaller demand fluctuations as a result of loyalty by customers; weak price competitiveness in relation to Swedish competitors in the future is a potential threat
C	import price competition	high quality of the physical product and rapidness of deliveries; specialization into special components	though lost market share in general, retained its position in special components; diversified production to subcontracting
D	entry of new competitors/ price competition	customization, high quality and outlook of the product	successful in the short term especially in export markets; harmonization of technical standards in the EU is a potential threat

For firms producing industrial products for other firms to offer (subcontractors) horizontal differentiation may be inherently difficult as indicated by the cases of Firms A, B and C. This is largely due to the requirements of technical compatibility, and thus the factors that make differentiation unprofitable for the industrial small firm in these cases fall in the category of standardization economies. As a result of this, a firm may emphasize the quality of their

production service and use other means than physical features of products, such as supplementary services, to become different from competitors (Firm A). On the other hand, the appearance of an industrial product may, quite surprisingly, be an important attribute of quality (Firm C). On the other hand, not only lack of price competition, but excessive price competition in the form of competitive bidding, may make differentiation irrelevant for industrial enterprises (Firm A). In markets where vertical differentiation is important this may result in low quality products.

As to the success of the differentiation strategy, a long-term success in differentiation seems to require either continuous development of the product or preventing competitors from imitating or developing a better product. This is a process which requires resources. Obviously, asymmetric negative shocks, due to recession for example, may lead to losing of the particular competitive advantage based on differentiation (Firms A and C).

Possible influences of economic integration on product specifications and strategies of firms appear to be difficult to observe at the firm-level. In the above firm cases the direct effects of economic integration (through technical harmonization in particular) are perceived by the managers as insignificant, since many technical standards concerning the firm's products have not changed markedly in the 1990's (Firms A, B and C). On the contrary, there may be indirect influences. For example, one can argue that both product quality and

price have increased in the case of Firm D due to economic integration, even if the tendency in the markets in the longer term seems to be towards cheaper standardized products.

6. Implications for theory

In contrast to its treatment in industry-centred models the differentiation behaviour of firms has been explored in this paper empirically from the point of view of individual enterprises. The analyses have thrown up the following observations relevant for the theory of product differentiation. The first two are related principally to the characteristics approach, and the other two have been derived from the case studies.

Firstly, theoretical models of product differentiation seem to be built on assuming a group of firms rather than on examining the phenomenon from the point of view of an individual enterprise. For this reason, an analyst readily runs into problems when trying to propose exact hypotheses concerning the behaviour of individual firms. Paradoxically, for example, apparent horizontal differentiation by firms observed at the level of an industry may actually result from the upgrading of product quality by firms which have specialized in different aspects of quality. This particular possibility seems to be related to niche markets. A niche market is "that combination of customers and services

with respect to which the firm alone has a competitive advantage over any and all competitors... It is the right specialized segment of the market... where the maximum degree of product differentiation is limited by preferences rather than technology" (Pepall 1992, 397). In terms of the characteristics approach adopted in this paper, for a firm moving towards a market niche the importance of a single parameter of competition will increase. This not only makes the product horizontally different from products targeted at other niche markets, but involves vertical differentiation as consumers who prefer the specific characteristic are probably willing to pay for the increase in the extent of it. In other words, products of different market niches may be horizontally differentiated but inside the market niche there may be many products that are essentially vertically differentiated as they incorporate different amounts of the specific characteristic.

Secondly, on a more technical issue related to the characteristic approach to differentiation, I argue that horizontal differentiation defined in accordance with this approach may also involve vertical differentiation. In a two-product case this appears when one of the two products contains more of several characteristics but less of only few characteristics than the other one. In this situation it is likely that there is also a quality difference between the two products, although only horizontal differentiation can be confirmed. Thus, one cannot establish definitely a distinction between the two major types of differentiation using this approach.

Thirdly, it seems that especially in markets for industrial goods, differentiation

related to the product itself may be constrained by the technical standardization of products, i.e., by the requirement that products have to be compatible with other products by some of their technical characteristics. This seems to constrain the horizontal differentiation of products especially. On the other hand, improving quality may be emphasized by firms because of the lower risk of losing customers as a consequence of the respecification of a product than through horizontal differentiation. This is simply because enterprises are more likely to be uncertain about the distribution of tastes of customers, than about whether there is demand for a better product if offered at the same price (including costs of differentiation). From this perspective issues related to technical standardization and incomplete information seem to have got too little attention in the theoretical literature (see, however, Harrington 1995, in which firms are uncertain about the degree of product differentiation and acquire information on their realized demands in the light of the difference in their prices).

Fourthly, unlike in most theoretical models, in the real world firms usually have several possible strategic options at the same time. For example, a firm may differentiate horizontally or vertically, aim at minimal differentiation due to some informational externalities, for instance, or aim at cost-leadership instead of following a differentiation strategy. The long-term profitability of the different options depends not only on industry and market characteristics, as the theory generally seems to assume, but to a large extent situational and firm-specific

factors, such as first-mover advantages and the firm's ability to sustain its competitive advantage based on differentiation. Thus, there is certain parallel between this "a firm-level view" of differentiation and John Kay's (1993) perception of the competitive advantages of firms, which suggests that the work by Kay has been underutilized among industrial economists interested in product differentiation. More thorough consideration of his argument that firms create added value by distinctive capabilities, which are in general based on characteristics that are difficult to reproduce, could strengthen the theory of product differentiation.



Chapter III

Export Market Exit: A Case Study of Smaller Manufacturing Firms

1. Introduction

This chapter focuses on exit from export markets by minutely analysing the exit and re-entry behaviour of 10 smaller manufacturing firms in Finland. Recent studies of entry and exit behaviour of exporting firms suggest that firms have to incur sunk costs to enter exporting markets. This tends to cause hysteresis in trade flows (see, e.g., Dixit 1989a, Feinberg 1992, Roberts and Tybout 1997). Where the investment (or disinvestment) decisions are being made in an uncertain environment especially an option value for waiting exists (Dixit 1989b). Put differently, a firm may benefit from continuing exporting for a while even if the export prices fall below the average variable cost (AVC), since if exports became profitable again the firm is able to save the cost of an exit and continue utilizing the investments in supplying the export markets. From a policy point of view, as Roberts and Tybout (1997) note, the sunk-cost hysteresis is especially important due to the fact that in the presence of it, temporary policy regimes to support new export starts can have persistent effects in the number of exporting firms.

The research on smaller firms presented in this chapter has been developed independently of the work by Roberts and Tybout (1997) but is clearly relevant to their results. Roberts and Tybout carefully test the sunk cost hysteresis using panel data on a large group of Colombian manufacturing plants. They find their data supportive of the hypothesis. However, although the analysis by Roberts and Tybout certainly is more valid statistically than the present one (the

sample they use covers all manufacturing plants with 10 or more employees in four major exporting industries in Colombia, i.e., 650 firms), it does not allow the authors to analyse in detail the sources of sunk costs or uncertainty in exporting, the actual decision-making situations in firms prior to a market exit, or managerial attitudes towards exporting after the exits.⁴⁵ The purpose of this chapter is to cast light on these issues by an in-depth analyses of export exit and entry behaviour of firms. The usefulness of the case study method as a potential research strategy to explore hysteresis in trade has been suggested by Baldwin and Krugman (1989, 653).

Generally speaking, independent smaller firms are characterized by limited resources and a utility function which may include also other values than pure profit (such as employment). Independent smaller firms are also more prone to unique and random factors than large firms, for instance, due to the great influence of one person, the business manager, on the operations of the firm. Yet export market exits by small firms has been scantily studied. A study worth mentioning is Welsh and Wiedersheim-Paul (1980). They made a comparison between the experiences of current and failed exporters among 30 Australian firms, and concluded that the risk of failure in an export strategy is highest during

⁴⁵ For example, Roberts and Tybout (pp. 560-561) conclude that their “results are consistent with the view that an important source of sunk entry costs for Colombian exporters is the need for information on demand sources, information that is likely to depreciate upon exit from the market”. In a case study it is possible to study the sources for sunk costs to enter (or re-enter) export markets directly.

the initial exporting stage (p. 342).

The chapter has been organized as follows. In the next two Sections, I will present a theoretical framework of reference for the analysis. To start with, Section 2 will distinguish reactive exporters from active exporters. The use of this type of categorization of exporting activity is supported by earlier analyses of the data exploring decisions to export in smaller firms (see Lautanen 1996). Section 3 deals with potential reasons for a small firm's exit from export markets and the sunk cost hysteresis. On the basis of this literature survey I suggest that exits by reactive and active exporters will be different in many respects. The empirical part of the chapter begins in Section 4, with economic developments in Finland over the last decade discussed first, and the case study data and the case reports presented second. In the deep economic crisis at the beginning of the 1990s Finland's Markka was devalued by almost 40 per cent, but regained most of its value during the consequent 2-3 years. Among other things this development had a great influence on the opportunity cost of exporting in Finnish firms, which is evident among the 10 firms highlighted in this chapter.

My interpretations of the case study data will be presented in Section 5. The potential influences of domestic demand and the exchange rate, sunk export costs, sources and types of uncertainty in exporting operations, and factors that have in practice triggered the decisions to exit will be discussed separately. For a theoretical replication, the experiences and behaviour of the firms are compared

with the idiosyncrasies of firms that have been exporting uninterruptedly since they initially entered export markets (Section 6). In the final Section I outline my views of the implications the findings have for theory and further research.

2. Reactive exporters and active exporters

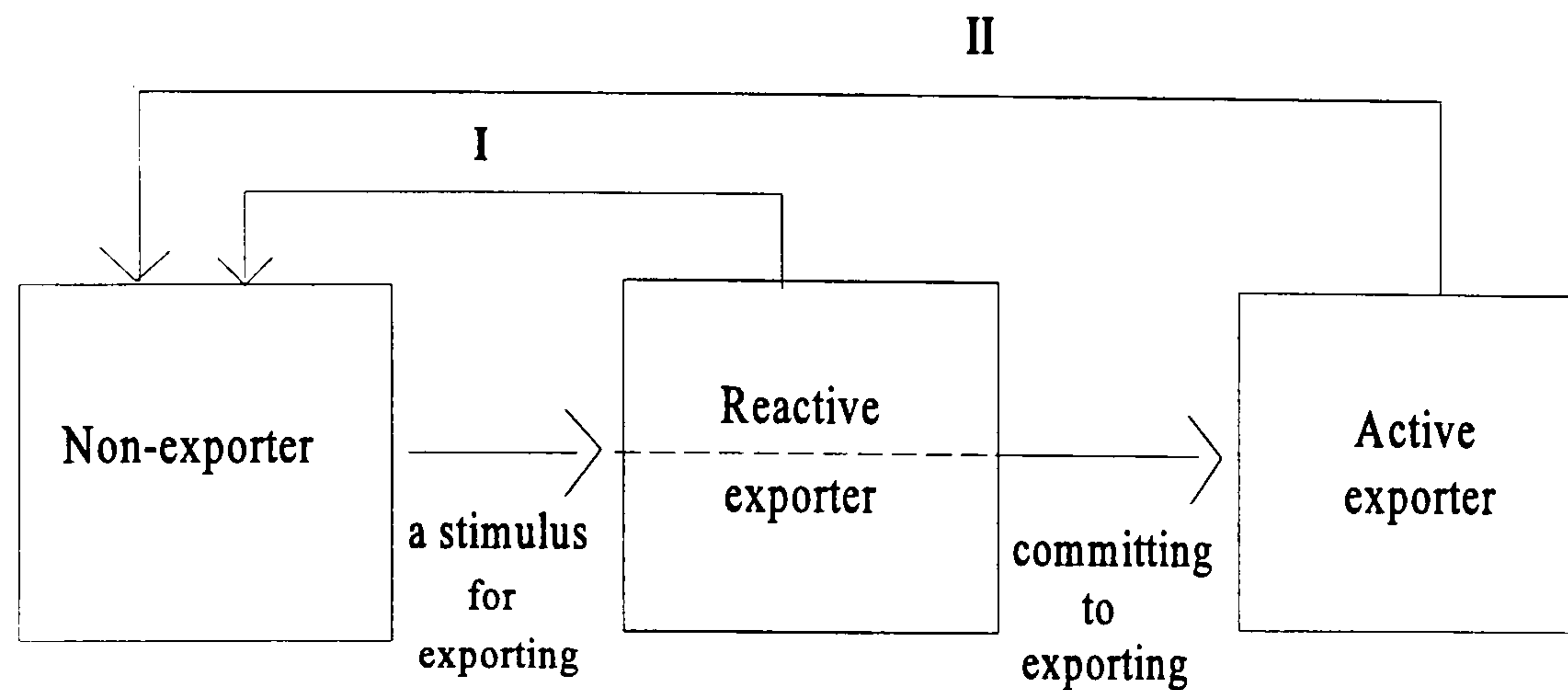
Factors that lie outside firms, such as an unsolicited order from abroad or a piece of information transmitted through other firms, governmental agencies, banks or middleman are important stimuli for entry to export markets in small firms (Miesenbock 1988, 45). For this reason, the pre-export level of knowledge of international operations is often conspicuously low in small firms. Against this background it is no surprise that not all smaller firms ever effectively establish their exporting (see, e.g., Welsh and Wiedersheim-Paul 1980, 335). Not all products even have clearly international markets (Kay 1990), which is a fact especially relevant in the case of industrial firms producing products to offer (i.e., subcontractors).

On the other hand, randomly chosen firms differ amongst themselves in their size, products and resources, which, among other factors, can influence their expected profits from exporting. Lautanen (1996) has suggested that firms that have become interested in export marketing will have different optimal paces in committing themselves to an exporting strategy depending on their expected

profits.⁴⁶ This argument suggests that different factors can be important at different stages of the exporting decision by a small firm. Thus, for the purposes of this chapter, it seems reasonable to distinguish two different cases of making an exit from export markets. The first one of these concerns making an exit from reactive exporting, i.e., when the exports is based on unsolicited export orders (type I; Figure 1). Although in general the internationalization of firms undoubtedly has developed towards a more straightforward and strategic process (see, e.g., Young 1987), many small firms still start exporting by responding to unsolicited orders. The second type of exit from exporting is where a firm makes an exit from active export marketing (type II, Figure 1). In the following Section, potential factors influencing a small firm's decision to make an exit from export markets will be discussed in detail.

⁴⁶A sequence of firms adopting the export strategy is described in Lautanen (1996) by applying an existing two-period model of diffusion of new technologies to the decision-making problem. The assumptions of the model guarantee that firms which have by some point of time committed themselves to exporting will export regularly ever after. Accordingly, the model does not allow for the possibility of an exit from the export markets. It is notable that a corresponding feature, which is at least to some extent in contradiction with the real world, seems to be general among theoretic models of diffusion of new technologies (see, e.g., Stoneman 1987). Success and failure in industrial innovation itself has received more (empirical) attention (see, e.g., Freeman and Soete 1997, 197-226).

Figure III.1. The two primary types of exits from export markets



3. Review of causes of a small firm's exit from export markets and hysteresis in exporting

Although making an exit from export markets has not been addressed explicitly in the literature on small business internationalization, significant attention has been paid to reasons for non-exporting as well as the problems that exporting firms have perceived with their export operations. According to Miesenbock's literature review (Miesenbock 1988, 45-46) the most often-named reasons for non-exporting that lie inside firms are limited capacity, lack of information, difficulties in export marketing (especially with distribution) and lack of interest. Absence of demand abroad, red tape, excessively high costs abroad and trade

impediments are the most common external reasons for non-exporting for firms. As far as the problems with exporting are concerned, the most important ones are lack of knowledge about foreign market opportunities, lack of qualified staff, lack of language knowledge, lack of capital, problems with international marketing, problems with collecting money, documentation and red tape, all kinds of trade impediments and lack of management time.

It is worth noticing, firstly, that there are very few problems in the above list which are not related to resources (skills and size) of firms. Secondly, rivalry and competitiveness in the foreign markets are not directly referred to, although some of the issues (such as absence of demand abroad, excessively high costs abroad or problems with international marketing) may be deeply related to competitive forces.

3.1. Competitiveness and actions by competitors

From the point of view of an individual enterprise, a natural reason for withdrawing from an export marketing experiment is perceiving negative feedback on the profitability of the export operations. A firm may not be competitive enough to establish its position in the export markets, remaining thus vulnerable to competitors actions and problems in distribution channels. Export competitiveness is influenced among many other things by the choice of the right export strategy

(Piercy 1982, see also Eskelinen and Lautanen 1996) and uncertainty. For example, an increase in political or economic uncertainty in the destination country may increase the costs of hedging enough to make exporting unprofitable⁴⁷. On the other hand, a cost of exporting is an *opportunity cost*, which (assuming that capacities cannot be adjusted instantly without a cost) implies that the true profitability of exporting is dependent on the development of the domestic markets. Price competitiveness in exporting naturally relates to changes in the exchange rate (e.g., Baldwin and Krugman 1989).

A firm may also make an exit from export markets due to rivalry. It is well known that incumbent competitors in the market segment a firm is trying to enter can take strategic actions (such as limit pricing, preemption or signalling commitment) to deter the newcomer from establishing its position in the markets (for such models, see, e.g., Tirole 1988, Chapters 8 and 9). Furthermore, in competitive markets inefficient firms will be replaced by more efficient ones, which can be expected to be true at least to some extent also in the real world. It is also possible that firms behave strategically and force their competitors out of the market, as the models of predatory dumping or advertising suggest (see, e.g., Tirole 1988, 372-375).

⁴⁷This is suggested, for example, by the recent experiences from former state socialist countries such as Russia (see, e.g., Chapter 4 in Kuznetsov 1994, Eskelinen and Lautanen 1993).

3.2. The concept of strategic markets

Another explanation for withdrawing from exporting at the initial stage may be that the product is simply not very suitable for exporting: in Kay's (1990) terminology, it may not have international (or global) strategic markets. A strategic market defines in both geographic and product dimensions the smallest area and range of products within which it is possible for a firm to be a viable competitor. A central feature of the strategic market is that it reflects not only the demand or supply conditions for any particular product, but the interrelationship between these two, i.e. between the economic markets and industries (Kay 1990, 7).

Some markets are inherently organized globally or continentally, while some nationally or locally. Sometimes firms operate viably with a product range narrower than the strategic market or in an area smaller than this. This is explained by the non-existence of economies of scale, economies of scope and locational comparative advantage, under which the strategic market is defined.

On the other hand, the geographic dimension of an industry sets rather well defined limits on the geographical expansion of markets: It is the area within which the location of production can be determined independently of the location of consumption (Kay 1990, 13). This is a valid explanation of why some subcontractors of industrial products (especially those firms which apply the just-on-

time -principle, are involved in close R&D cooperation or offer bespoke, highly customized products), seldom export their products on a regular basis⁴⁸. It is also notable that the dimensions of markets are determined by the economic facts of a particular case and not necessarily changed by any legal arrangements such as those related to economic integration (Kay 1990, 22). Overall, the strategic markets approach suggest that for some firms with certain product ranges an adoption of an export strategy is unlikely even in the absence of any barriers to trade.

3.3. Failure in learning

Another view on the causes of exit from export markets by a small firm is provided by studies that have considered internationalization as a learning process. Experimental exporting by an independent small firm targeting an adoption of the export strategy can be seen as an endogenous learning or entrepreneurial process. The endogenous nature of this process follows from the fact that it is unlikely that other firms are the main source of the critical industry-specific market information and knowledge. This is because firms tend to keep this kind of information back from their (potential) competitors (Lindmark et al.

⁴⁸This is also a reason why a firm's position in the industrial production chain may matter in the internationalization of firms in general (cf. Christensen and Lindmark 1993).

1994.) An underlying reason for withdrawing from exporting can thus be a persistent excessive uncertainty in export markets as a consequence of failure in this process. Naturally, a negative feedback on export competitiveness is a central part of this learning process (Welsh and Wiedersheim-Paul 1980, 340.)

The study by Welsh and Wiedersheim-Paul (1980) suggests that the level of pre-export preparation, the level of early commitment to exporting, and export marketing behaviour are important behavioural factors influencing the success of the learning process. Lack of preparation and commitment increase the possibility that negative feedback from the experiment will be interpreted as a serious indication of impracticability of exporting, whereas prepared and (mentally) committed firms are more likely to regard it as a normal by-product of foreign operations (p. 339). Further, active marketing behaviour is seen as necessary to find and keep the right contacts and develop expertise in marketing. As the entrepreneur is the key person in a small firm's learning process (e.g., Reid 1981), it seems obvious that a change of business manager can have a direct influence on the export orientation of a small firm. These views are supported by Aaby and Slater (1989, 21) who, on the basis of more than 50 empirical studies, conclude that in firms with management commitment to exporting, better management systems, planning of export activities and earlier export experience export performance tends to be better than in firms without these features.

3.4. Hysteresis in exporting

3.4.1. The role of sunk costs

The depth of a firm's financial commitment to export markets is influenced by the sunk costs the firm incurs to develop exporting operations. As is well known, sunk costs are fixed costs that cannot be realized to their full value (less normal costs of usage and capital depreciation) when exiting the markets (e.g., Baumol 1982, 4)⁴⁹. This makes sunk costs not only an entry barrier but an exit barrier. Sunk costs also work as a signal to other firms of the firm's commitment to its markets (see Eaton and Lipsey 1980).

If there are sunk costs involved in entering a market these costs make a firm treat exit differently from entry. Specifically, as to an exit, costs of the exit matter. (Bresnahan and Reiss 1993, 185.) These can be thought to be influenced by two factors. Firstly, there may be direct costs from an exit, such as redundancy payments if the exporting has involved hiring additional staff that cannot be utilized in other operations of the firm. However, it is also possible that the firm can merely suspend its foreign operations without abandoning outright the exporting project, and continue operations when the state of demand improves.

⁴⁹ Distinguishing between sunk and other fixed costs may be problematic in empirical work, though the concept itself is theoretically well established (see Weitzman 1983).

Thus, secondly, the extent to which suspending and restarting the exporting operations is costly also matters. (Dixit 1992, 119.)

Sunk costs can cause “hysteresis in trade”, an idea which was introduced in the mid-1980s by Richard Baldwin (Baldwin and Krugman 1989, 636), and extended and empirically studied in several papers including those by Baldwin, Krugman, Dixit and Roberts mentioned above. Hysteresis in trade means that temporary shocks, say exchange rate shocks, can have persistent trade effects: once firms have invested in marketing, distribution networks, etc., to enter a foreign market at a certain level of exchange rate, they will find it worthwhile to stay at the markets even at a lower exchange rate. This is because in the presence of sunk costs it may be optimal for firms not to exit the export markets as soon as they start to run operational losses (or, when price falls below the AVC), for reasons that will be discussed in more detail below.

Typical costs related to exporting are outlays from, for example, market research and the search for suitable distribution channels, advertising and marketing abroad, or country-specific technical testing and certificates needed in order to enter the foreign markets. Firms may also need to carry out specific investments in production (for example, in technology or additional capacity) or to increase the level of international skills of its personnel. It seems reasonable to suspect that these costs may be a significant proportion of a firm’s revenues if the firm itself is small and export oriented, though in general sunk costs related to

exporting are probably small compared to the costs of organizing production abroad.

3.4.2. Option value of waiting

Where the development of exporting has involved sunk costs and there is uncertainty about the future profits from exporting, there exists an option value for waiting. In a similar way to that theorized in disinvestment decisions (Dixit 1992, 121), the sunk costs incurred to enter the export markets (as well as direct sunk exit costs) are likely to lower the exit trigger price. With uncertainty caused by, for example, a random component in the business manager's skills or learning, this trigger price is even lower. Indeed, if there is uncertainty about the future profits from exporting it is optimal for a firm not to make the exit as soon as the price falls to the AVC, which is the exit trigger price in the standard textbook, or 'Marshallian'⁵⁰, theory, but rather to delay the decision beyond this point.

The intuition behind a firm's behaviour is obvious: if, while the firm has suspended operations or is absorbing some operating losses the foreign operations turn to the black again the firm will be able to avoid losing the stake sunk by

⁵⁰Dixit (1993) uses this term.

having waited. If the revenues from exporting do not improve, at some stage the loss from the unprofitable export operations reach the point where the firm is willing to exit the markets and abandon the export project. In theory, this is the point where the current losses exceed the value of the option (Dixit 1992, 120).

A similar logic applies to entering markets if this requires incurring sunk costs. By waiting in an uncertain environment (which may be caused say by a recently established cooperative partner) a firm can rule out the possibility of losses due to a potential worsening in expected profits and still enter if the good state (good performance of the cooperative partner) seems not to be only transitory. In practice, this leads to an entry trigger price higher than LRAC which is the trigger price suggested by the standard theory without sunk costs and uncertainty. As Dixit points out (op. cit., 119): the “passage of time reveals more information”, which is valuable for firms in these uncertain situations.

Dixit (1992 and 1993) distinguish two types of uncertainty that eventually lead to similar trigger prices for investment (higher than LRAC) and disinvestment (lower than AVC) decisions, and thus to waiting. The first one of these is uncertainty which is specific to a firm. This is the case explained above. The second type of uncertainty is at least industry-wide, such as an exogenous demand shock or a change in technology. Now, given rational expectations, no single firm has informational advantage over its rivals in relation to this uncertainty. Thus, if a firm does not take the option to exit (when the price goes below

AVC in the markets and firms start to suffer operating losses) it can presume some other firms will. However, since exits would increase the price on the markets, there is again an option value for waiting. (See, e.g., Dixit 1993, 7-8)

3.5. Preliminary conclusions

Overall, the argument above suggests that there are three crucial factors influencing a small firm's decision to exit from export markets. These are investments in exporting, the expected profitability of exporting, and uncertainty related to exporting. The two latter mentioned factors can deteriorate via the influence of factors that lie both inside and outside a firm. Some preliminary suggestions for characteristics of the two types of withdrawing presented in Section 2 are summarized in Table 1.

Table III.1. Suggested characteristics of the two types of exits from export markets

	Type I	Type II
Exporting activity	unplanned, reactive	planned, active
Basic nature of the exit	redirection of interests	loss of export markets
Investments to exporting	small in proportion to firm size	large in proportion to firm size

Potential causes	negative feedback on profitability and feasibility of exporting, barriers to entry, failure in learning (endogenous factors), non-international strategic markets	exogenous factors reducing profitability of exporting, rivalry
Source of uncertainty	inside a firm	outside a firm
Timing	early ($AR \geq AVC$)	late, involves a period on a loss ($AR < AVC$)
Consequences	loss equivalent to opportunity cost	loss or underutilisation of assets invested in exporting

The factors behind an exit from reactive exporting (type I) are likely to lie inside a firm, whereas the factors relating to withdrawing from active exporting are likely to lie outside a firm (type II). This preliminary suggestion follows from the fact that, firstly, the establishment of exporting can be seen as the end of the critical intra-firm process of learning to operate abroad (Christensen and Lindmark 1993, 142). Secondly, it can be assumed that the influence of domestic market conditions, or the entrepreneur personally, on export routine has decreased by this stage. This is because the export activities tend to functionally specialize in the firm organization (Miesenbock 1988, 47; Reid 1982). Given this argument it can be assumed that exogenous factors, such as changes in the exchange rate, transportation costs, technology, or uncertainty due to factors that lie outside a firm, are more likely causes of exits from planned and active exporting than factors lie inside a firm. Hysteresis in exporting is also more probable in this type of exporting than in unplanned or reactive exporting due to the fact that exporting has become an important part of the firm's operations and

it is likely to have incurred sunk costs to develop the exporting operations.

4. A case study of industrial small firms in Finland

4.1. Economic developments influencing foreign trade in Finland from the mid-1980s

Since the mid-1980s two important developments in the economy of Finland have had an influence on the country's foreign trade. The first one of these is the collapse of the bilateral trade between the Soviet Union and Finland, and the development of closer relations to the European Community. The second one is the major macroeconomic fluctuations that included a boom and overheating of the economy at the end of the 1980s and a consequent dramatic downturn and economic crisis in the early years of the 1990s. Before going into the case study data I briefly describe these in turn.

During the period from the Second World War to the beginning of 1990s the Soviet Union was one of the most important trading partners for Finland. The share of this "East trade" in the total exports of the country was at its height (approximately 25 %) at the beginning of the 1980s, after which it gradually decreased to about 15 per cent in 1989, and eventually collapsed to just a few per cent by the beginning of the 1990s. The trade practically ceased in 1991 when the

Soviet Union collapsed and the bilateral trade agreement ended. At the same time, however, Finland had been developing closer relations to the European Community. Finland formalized its long-term free-trade relations with the European Free Trade Association (EFTA) in 1986, and was thus able to join the European Economic Area (EEA) when this was formed in 1994. Finally, the country became a member in the European Union (EU) at the beginning of 1995. The share of the EEC/EU countries in the total exports of Finland has risen from about 35 per cent in the beginning of the 1980s to 55 per cent in 1996 (Central Statistical Office of Finland 1984, Statistics Finland 1998). The country also joined the ERM in October 1996 and it aims at entering the EMU among the first countries in the EU.⁵¹

The economic crisis at the beginning of the 1990s was caused by several simultaneous adverse demand and supply shocks. In addition to the overheating of the economy in a vast boom in 1987-89 and the collapse in the East trade the seriousness of the recession was increased by a too rapid deregulation of the financial markets in the mid-1980's, a cyclical downturn in the Western European markets at the turn of the decade and the unrealistically high external value of

⁵¹Trade in industrial goods has been free of tariffs between the EU (or its predecessors) and Finland since the late 1970's through the associate membership in EFTA. Consequently, in most industrial goods the deepening of economic integration in the 1990s has implied a reduction in the non-tariff barriers to trade in particular. For a succinct historical survey of the integration between Finland and the Western Europe, see ETLA 1992, 28-32, and the ending of the East trade, Rautava 1995.

Markka until 1992, and rapidly increased public and foreign debt from 1992 on (Bordes et al. 1993). In terms of GDP the economy declined by about 10 per cent in 1991-1992, after which it started to recover under the export sectors' lead. Yet in 1997 the economy still was to some extent depressed by persistent high unemployment and the indebtedness of the public sector.⁵²

The economic crisis was reflected in great changes in the external value of Finland's Markka. Towards the end of the 1980s the unstable economic situation started to result in pressures against the high value of Markka - in accordance with the so-called "strong Markka" regime the external value of Markka was kept administratively at its high level. The country's export industries, which are crucial for the small open economy, suffered from a lack of price competitiveness in the international markets. In 1991-92 the speculation against the Markka grew strongly. A devaluation by 12.3 per cent in the autumn of 1991 was not enough to remove the speculation: in September 1992 the Markka was left to float. The external value of Markka further depreciated by a more than 20 per cent, but afterwards started gradually to regain its value as the economy recovered from the slump. By the early 1995 Markka had rebounded back to its pre-floating level, and it was joined to the ERM at the rate 5.81 FIM/ECU in October

⁵²The annual rate of unemployment rose from 3.4 % in 1990 to 13.2 % in 1992, and to 18.4 % in 1994. In 1996 the corresponding figure was 16.3 % (Statistics Finland 1998). The central government debt as a percentage of GDP rose from about 10 % in 1990 to about 70 % in 1996, and has only recently started to level out (Bank of Finland 1998).

1996. (Hernesniemi et al. 1996, 22, Bank of Finland 1996.)

4.2. The data

The case study reports below have been compiled mainly on the basis of data collected in two separate interviews of the managing directors of 10 industrial small businesses in Finland. These interviews were carried out in the spring of 1996 and in the summer 1997, the latter one of which specifically for this case study (for the interview agenda, see Appendix 3).⁵³ In addition to that, material from an earlier Nordic comparative study on the internationalization of smaller enterprises (in which the ten firms studied here were included) has been used as background information and to plan the later stages in data collection. Initially the firms were chosen in 1992 for the Nordic comparative study using the following criteria: the firms should be independent and locally owned enterprises, or belong to a local group of firms. They should operate either in wood-

⁵³In total the data-set includes 80 firms interviewed in 1992. Of these, 76 firms were reinterviewed in 1996. The interviews in 1992 were associated with the Nordic comparative study "Småföretagens internationalisering - en studie av anpassningsprocesser till EG'92 och regional utveckling" (see Lindmark et al. 1994, Eskelinen et al. 1994 and Lautanen 1994). The interviews in 1997 were half-structured, whereas the interviews in 1992 and 1996 were based on a structured questionnaire form. All interviews have been confidential and made in face-to-face situations. The interviews in 1992 were carried out by a pair of academic persons involved in the project (including the author of this article), whereas the interviews in 1996 and 1997 were carried out by the author of this article. For more about the data-set, see, e.g., Lautanen 1996 and Eskelinen et al. 1994.

processing or engineering industries, which are the traditionally most important export industries in Finland. The number of employees should be between 10 and 200, and the firms should be located in four different types of regions consisting of a total of 14 labour market districts in different parts of Finland. Because some of the firms have been reorganized since 1992 there are a few firms in the data-set that no longer strictly fulfil these criteria. This study focuses on all those firms among the 76 firms (55 firms with export experience) interviewed in 1996 which have at least once in their history ceased exporting.

The accuracy of the information collected in 1997 has been checked against the information gathered in the earlier interviews and thus corroborated. The contents of the stories presented below has also been confirmed by the managing directors interviewed. Other sources of information were direct observation through visiting the firms the three times, product brochures and other written material obtained from the firms. The cases have been presented anonymously at the managers' request. Basic information on the exporting operations by the firms is presented in Table 2.

Table III.2. Basic information on the firms and their exporting history ⁵⁴

Firm (approximate n. of employees in 1996)	Sector	Export product	Destination(s) and time of initial entry to the first country and exit from exporting	Max share of exports of the turn-over	Destination(s) and time of re-entry and possible exit from exporting	Max share of exports of the turn-over since the re-entry
A (Lpc) (15)	wood-processing	antique-like furniture	The Soviet Union 1972-1987 ^a	35 %	Russia 1991- ^b	1996: 14 % (incomparable)
B (Ltd) (35)	wood-processing	log houses	Several European countries between 1977-1987 ^a	15 %	Central European countries 1991- (later also countries in the Far East) ^b	1996: 70 %
C (Ltd) (10)	engineering	an aluminium framed window	Sweden 1983-1987 ^b	25 %	Sweden 1993-1994 ^b (a try in 1990-1991 ^b)	1994: 2 %
D (Ltd) (20)	engineering	metal structures for fish breeding establishments	Norway 1985-1989 ^{na}	10 %	Estonia, Sweden 1994- (ploughs, small diggers and other earthmoving contractor equipment) ^b	1996: 8 %
E (Ltd) (35)	engineering	moulds for refrigeration industries	Sweden 1992-1992 ^a	10-12 %	Sweden 1994- (preceded by an unsuccessful try to Germany in 1994; later actual exports also to Denmark, Norway, Poland, Ireland) ^b	1996: 70 %

⁵⁴The present (1997) ownership structure of the firms is as follows: Firms B-E and J are privately owned limited companies (Ltd). Firms A, F and I are limited partnership companies (Lpc) of which A has a sales subsidiary (Ltd). Firms G and H are Ltd:s that belong to larger domestic groups of firms (Ltd*). As regards entering export markets, a superscript "a" refers to unplanned initial export deliveries and "b" to a planned, or strategic entry.

F (Lpc) (<10)	engi- neering	log lathe	Russia and Czech Republic 1992-1994 ^a	60 %	- (a try to Canada 1996) ^{na}	-
G (Ltd*) (>200)	engi- neering	circuit boards	Sweden 1992-1993 ^a	0.25 %	-	-
H (Ltd*) (20)	engi- neering	teaching equipment and fixtures for natural sciences	Sweden and Russia 1994-1994 ^b	3-5 %	Sweden and the Netherlands 1996- (minor exports to some other European countries and Russia) ^b	1996: 4 %
I (Lpc) (30)	wood- pro- cessing	lami- nated wood board	Germany 1995-1995 ^b	5 %	Estonia and Russia 1997 (windows and doors) ^b	1997: 5% (estimate)
J (Ltd) (20)	engi- neering	a ma- chining part	France 1995-1995 ^a	1 %	-	-

With the exception of the cases G and H the firms were in 1997 independent and privately owned businesses (either limited ownership companies or limited companies). With the exception of firm G the firms employ at most 35 employees. Seven out of the 10 firms reentered exporting markets, from 1 to 6 years after the first exit. The maximum annual share in exports of the total turnover of a firm before making an exit varies from 1 to 60 per cent depending on the case. In 6 firms the exports had started from an unsolicited order and in 3 cases the initial entry to foreign markets had been planned beforehand. As to the 7 re-entries, they had all been planned, or strategic.

4.3. The case study reports

4.3.1. Firm Case A

Firm A had noteworthy direct exports to the Soviet Union between 1972-87. The firm produces high-quality antique-like furniture and employs about 15 employees today. Most of the sales and marketing activities were separated from the limited partnership company A into a sister corporation (Ltd) already in the 1970s (The numbers presented here unless otherwise mentioned will concern solely the productive Firm A). In relation to the whole market for furniture in Finland the firm operates on a narrow and ever diminishing market segment of antique-like furniture. In recent years the firm has striven to develop new models of furniture for the reason that its handmade antique furniture has been imitated by manufacturers of furniture. Competition in price in the market segment has clearly increased in the 1990s.

The exit from the markets in the Soviet Union in 1987 after several years of exporting is related to the gradual collapse of Communism in the country and the consequent end for bilateral trade between Finland and the Soviet Union. The exporting was initiated through a contact that came into being at a trade fair in Turku in the early 1970s. There was no need for a market research since in those days the purchases were at the hands of particular quarters in the Soviet Union. The most important customers for the firm were organizations purchasing

furniture for luxurious hotels and premises of the Communist party. These quarters were easily available which made advertising in the export markets unnecessary. In fact the most essential costs for developing the exports were in those days outlays from sustaining warm relations with the customers by, for example, inviting them from time to time to visit Finland. The exports increased rather quickly for which the firm hired more employees. The only marked cause of uncertainty in exporting after the mid-1980s was the fact that it was not known for how long would the furniture be required by the Soviet Union. Otherwise the risks were perceived by the firm to be low because the customer was basically the Soviet government and the exchange rate risk was eliminated by binding the business into Western currencies.

The exports ended when the purchases gradually ceased by 1988. Fortunately, the home-markets were growing fast at the same time for the boom in the end of the 1980s. While in 1985 about 35 per cent of the turnover consisted of exporting, this proportion dropped to 16 per cent in 1986 and to 3 per cent in 1987. The firm searched out the earlier partners - most of whom just seemed to have disappeared - but was also trying to export through its own agents. Some occasional export deliveries indeed took place in the end of the 1980s, but a more noteworthy trade was hampered by unstable political and economic situation in the Soviet Union, and the liquidity crisis of potential private customers there. Unprofitable exporting was not continued, and the firm was left, contrary to many other Finnish firms involved in Eastern Trade, without outstanding claims from Russia. Overall, the

exporting to the Soviet Union had been very profitable and brought the firm its basic capital. There was hardly any competition involved in exporting operations at that time and the provision was clearly better than in the domestic markets. This was due much to the bilateral trade agreement between the two countries, which gave the firm an advantage over its foreign rivals. When the bilateral trade gradually ended this advantage no more existed.

The ending of exporting fell upon the enormous boom in the latter part of the 1980s in Finland. The bringing of exporting to a standstill could be fully compensated in 1987-88 by the strongly increased domestic sales. Despite the decrease in exports, the turnover of the firm grew for 33 per cent in 1987. In 1988 the growth of turnover of the firm reached enormous 250 per cent, though this is explained by increase in sales rather than in the volume of production. To meet the demand, the firm further invested in additional capacity and hired more employees.

The high demand continued until, in 1991, the markets virtually collapsed. The sales company was hit hardest by the economic crisis: the turnover of the company fell in 1992 into less than 1/10 of the amount in 1988-89 when the boom reached its peak. The operations of Firm A were also dramatically decreased because of the depression. To survive the firms tried to offset the decrease in domestic demand by exports not only to the present Russia but to the Western countries. Regarding the latter destinations the aims were unsuccessful, but to the markets in Russia the firm re-entered already in the end of 1991. Increasingly the

sales company has also been an agent for foreign furniture to Russia. The share of exports of the turnover has increased incrementally to reach 14 per cent of the summed turnover of the sister companies in 1996.

Due to the transition in the East trade customers, export channels and the whole nature of export operations to Russia changed entirely for the firm. Formerly the local purchasers made the orders through the bilateral trade system, whereas now the firm had to search for customers and decision-makers in the export destination by itself. In contrast to the earlier situation, the customers are mainly private persons today, for which reason the firm has started, for example, to advertise in the export markets. The adaptation to the change has however appeared to be difficult, which has been reflected in the fact that the volume of exports has not reached the earlier level. Financing difficulties of ordinary Russian customers is a problem, because of the high risks the orders have to be invoiced always in beforehand: 50 per cent of the order even before making the furniture. Exporting to Russia in the 1990's has increased, especially the turnover of the sales company, but the influence of exports on Firm A's production and organization have been smallish. In general, taught by experience, the firm has not much increased the capacity or the number of employees in the 1990's but rather tried to increase flexibility in the use of it.

4.3.2. Firm Case B

Firm B (privately owned Ltd) produces log houses for residential and leisure purposes. The firm has about 35 employees. Its principal market areas in addition to the domestic markets are certain countries in the Far East and in the central Europe. In the home-markets the firm is marketing both residential and leisure houses, whereas in the Far East the demand principally concerns leisure houses and in the central European markets residential buildings. Traditionally the log houses have been highly customized, but the effect of this gradually is decreasing especially in the foreign markets.

As many of its counterparts in Finland did, the firm experienced great fluctuation in the demand for construction in 1988-91. During that period the turnover of the firm rose substantially for about 2 years and then fell dramatically in 1990-91. One can distinguish two different periods in the firm's exporting operations, one before and one after the domestic boom. The first one of these consisted of reactive exports. The firm got the initial export order in 1977, and the reactive exporting ended in 1987 when the home-markets grew strongly enough to make the firm short of capacity. The second export period started in 1991 when the domestic markets for log houses in Finland collapsed. As an indication of the active development of export operations the foreign markets have since then become the main source of business for the firm and count for more than 70 per cent of the turnover today. The firm has been run in the 1990s by a new manager

as a consequence of a transfer of generation in 1988.

During the first export period the firm did not aim at marketing its products abroad but only replied to unsolicited orders. The operations were unplanned and the principle of market segmentation was not utilized. If there were problems with deliveries to one country, the firm usually made an exit from that country markets and replied to orders that were received from other countries. At maximum the share of exporting of the total turnover reached about 15 per cent, being directed to 1-2 countries at a time. The firm stopped exporting when the domestic markets grew strongly in 1987: in 1988 the firm's capacity was in full use, the turnover of the firm grew for 50 per cent and the number of personnel increased for 25 per cent. The main reason for the exit was that the firm did not have any explicit export strategy, i.e. the management had not made a decision to export. To a smaller extent the exporting had also been hindered by the high external value of Finland's Markka. In addition to the above mentioned factors, the lack of language knowledge in the firm and problems which appeared in country-specific adaptation of the products contributed to the end of exporting.

This reactive exporting had no marked impact on the firm in the 1980s. The firm did not invest much in exporting and exporting expanded the firm's operations only noticeably. This situation changed completely when the domestic markets collapsed at the turn of the 1990s. Now to survive from the economic crisis it was absolutely necessary for the firm to find markets abroad. In 1991 when the first

export deliveries were supplied, the turnover of the firm was no more than 2/3 of the turnover in 1989. The firm started to develop exporting actively and by that means committed into this strategy by reasonably large investments. From the year 1991 the turnover has more than doubled and the share of exporting increased from 10 per cent to more than 70 per cent of the turnover. The re-entry into the export markets has now resulted in obvious changes in the firm: in particular, organizational efficiency has increased through more accurate division of labour and the quality certification of products in exporting has developed. Export prices in different destination countries are set according to results of market research that has suggested inter-country differences in customers' willingness to pay for log buildings.

Already by 1997 the firm had invested in exporting in the 1990's more than 10 times the amount invested during the earlier exporting period. The costs have mostly been sunk costs: outlays from country-specific market researches, travelling expenses and outlays from establishing show rooms abroad. Advertising and marketing has been left however for the local distribution channels. Because of the fact that the investments into exporting were small in the 1980s, the exit from the foreign markets did not involve any direct loss in 1987. The real significance of the end of exporting was, however, realized later when the domestic markets started to decline: the earlier export channels, though weak, had now been lost - and the re-entry had to be started from the very beginning.

As a reactive exporter the firm experienced uncertainty that clearly originated mainly in the firm itself: the risks related to investing in exporting were perceived as too high for, among other things, lack of language knowledge and other resources. On the other hand, in the 1990s the uncertainty has been related to unstable economic state of the national economy of Finland which has caused unexpected changes in the firm's foreign competitiveness. The essential macro-economic factors include fluctuation in the exchange rate, increasing costs of labour, and high taxation. Thus, during the active export development, the uncertainty has originated outside rather than inside the firm.

4.3.3. Firm Case C

Firm C (privately owned Ltd) produces glazing frames of light-alloy metal. These are of two types. Firstly, so-called 'front windows' that consist of a single pane of glass held in an aluminium frame, which is placed within (in-between) the frame of the original double glazing (approximately 85 per cent of the turnover).

Secondly, 'additional windows', which consist of complete double glazing units inclusive of aluminium frames. The firm has slightly more than 10 employees.

Geographically the main market area is the Southern Finland, especially Helsinki and Turku regions. In contrast to the situation in the mid-1980s when the most important customers were smaller private houses, today's marketing is targeted at housing corporations and real estate companies.

The windows produced are customized products which makes it possible for the firm to participate refurbishment of houses starting from their planning stage.

With regard to the whole window markets the firm is specialized and operates in a narrow market segment. The competitive edge of the firm is mainly based on differentiation from competitors by bundling supplementary services into the product: the firm offers not only an assembling service but also other kinds of repairing related to replacing windows and aluminium structures needed in this process. The supplementary services have been nominally separated into different companies.

The firm had exports of additional windows to a more marked extent in 1983-87, and to a smaller extent also in 1993-94. Investments made to re-enter the markets in 1990-91 did not yield result. All three times the destination market has been the Stockholm area. The first one of the export periods can be considered as a serious attempt to develop exporting as an important part of the operations of the firm. The second attempt to enter the markets in 1990-91 was a slightly lighter one and the third one in 1993-94 initiated by an business acquaintance. At its best the exporting counted for about 25 per cent of the turnover in the mid-1980s. At that time it had an important role for replacing declining demand for additional windows at the home-markets. The front window is not as easily tradeable as it always includes an assembly as well. Instead, additional windows could be sold also excluding an assembly.

Exporting involved quite a marked fixed costs in the beginning of the first exporting period, whereas in the case of the latter two aims to enter the markets the costs were smaller. The firm had a complete market research done in Sweden to assess its price competitiveness and local competitive situation in 1982, and to find a local cooperative partner. According to this market research and the firm's own experiences the product was perceived in Sweden as high quality, but for this reason could not compete in price. Unfortunately the first cooperative firm soon went bankrupt. The firm could however have the old agreement transferred as such to another firm. Marketing has all three times been left to the local partners.

The first exit from the export markets in 1987 was again due to bankruptcy of the cooperative firm in Sweden. The firm did not strive to continue exporting at any cost as it seemed difficult to find a new trustworthy cooperative firm, and because the demand for front windows was vastly growing in the domestic markets in end of the 1980s. Despite the fact that the share exports of the turnover fell from about 10 per cent to zero, the total nominal turnover grew for 35 per cent in 1988. The withdrawal was also influenced by the fact that the whole operational model of the firm changed as the demand for front windows (which are always assembled for the customer) increased. Exporting was also hindered by language problems, high domestic level of costs and prices and higher risks related to exporting operations in comparison to operations in the domestic markets. The withdrawal in 1987 did not cause any losses since the firm was thorough in collecting claims, and the products were never sold under the average unit

production costs.

In 1990-91 when the demand in the domestic markets started to decrease ominously, the firm tried to re-enter the markets in Sweden. Using an export consultancy the firm acquired a new partner from a larger firm producing facades of buildings and found out about the situation in the markets. The demand for refurbishment construction was however clearly smaller due to a change in the VAT that had put a tax on assembly work (A similar change took place in the firms home-markets in Finland in 1994). Consequently, the firm ceased the attempts to enter the markets.

The second proper exporting period in 1993-94 was initiated by an earlier contact person in Stockholm. This time the firm developed a special model of the additional window for the export markets, but otherwise the firm was not interested in investing into exporting as much as before. Unexpectedly, however, the key person accidentally died and the firm was obliged to find another one.

Against the earlier experiences, this caused great uncertainty in the entry process. The export deliveries started through the new agent but the firm was not able to establish its position in the markets this time either. This was due to the increase in the external value of Finland's Markka that gradually eroded the price competitiveness of the firm in the foreign markets. Also the payments for supplied deliveries became delayed. When the complaints by the agent about the price of the product increased in 1994, the firm withdrew from the markets and focused its

concentration on the home-markets (the firm did not lower the price of the product for which reason the number of complaints was almost in direct relation to sales). At the maximum the exports counted for about 2 per cent of the turnover.

Neither of the exporting periods resulted in any marked changes in the firm's organization. The growth of the firm has been based on the expansion of home-markets rather than on exporting. With the exception of the export attempt in 1990, the exits from the export markets have been possible to replace via an increase in domestic sales. The export markets however arrested the decline of the firm's operations, when the demand for additional windows decreased in Finland from the mid-1980s. In addition, the export operations have contributed to product development and have also given other kinds of stimuli that have advantaged the firm in its home-markets.

4.3.4. Firm Case D

The main products of the firm D are articulated ploughs, small digging machines and buckets, in addition to other kinds of equipment for earthmoving contractors. The most important product at the moment is the articulated plough, which brings about 35 per cent of the turnover. The privately owned limited company has about

20 employees. Geographically the most important market area is the Southern Finland, and the metropolitan area in particular: From 40 to 50 per cent of the turnover arises from that region. The main aim of the firm in the domestic markets is to be able to keep the old and established customers and distribution channels such as Kesko Oy and Sisu Oy, which requires, among other things, continuous product development. The firm has entered export markets twice with different products and to different destination countries.

The first one of the exporting periods started in 1985 and ended in 1989. This included exporting of metal structures for fish breeding establishments in Norway. Exporting restarted when the firm entered markets in Estonia (contactor equipments) and Sweden (a small digger) in 1994. In 1995 the share of exports of the turnover was only about 5 per cent and in 1996 about 8 per cent but internationalization is one of the firm's main targets. In addition to exporting to Estonia, the firm has a plough factory there.

Exporting to Norway in the 1980s did not involve any significant investments.

The most important costs incurred from a few visits at trade fairs and yearly visits to Norway. Visits at fairs and translation services the firm used were supported by a state export promotion organization. There was no need for market research or advertising to enter the markets because initially the business was kindled through a client acquaintance in Finland. Neither did the exports require acquiring of any new machinery or equipment. The most important source of uncertainty in

exporting to Norway was the lack of knowledge in Norway. Exporting did not have any significant influences on the organization of the firm, but made the returns slightly better because of the greater mark-up in exporting in comparison to sales in the domestic markets. Before the exit exporting represented about 10 per cent of the turnover.

The exporting ended when the Norwegian client went on to purchase the fish breeding establishments from domestic engineering works in 1989. This was preceded by a clear increase in competition in the markets in Norway: the most important new rivals were engineering shops supplying structures for off-shore oil drilling platforms. As the demand for oil rigs was low many of the works became economically troubled. Some of them were afforded industrial support by the state for keeping their jobs which increased their competitiveness against foreign rivals. Firm D was willing to lower the price of its metal structures but this was not enough. Once realizing this situation the firm D tried to find markets for ploughs in Norway but failed in this endeavour. In contrast, in the domestic markets the firm succeeded in finding a new important customer (Lannen Oy). As the domestic markets were growing fast in the end of the 1980s in general as well, the firm turned its focus on the domestic markets. In 1989, despite the end of exporting, the turnover of the firm grew for 10 per cent. Thus, the consequences of the exit from the markets in Norway were in practice minimal for the firm, though exporting had been expected to develop as an important source of business.

In 1993 when the slump had substantially increased competition in the domestic markets, the firm started to search for foreign markets again. It succeeded to enter the markets in Estonia with ploughs and other contractor equipment, and in Sweden with a small digging machine. The meaning of exporting has since then increased incrementally: from 1994 to 1995 the turnover of the firm increased 36 per cent while the share of exports rose from 3 to 5 percent. In 1996 the share of exports continued its growth to about 8 per cent of the turnover, while the total growth of the business decreased to 6 per cent. The meaning of exporting will be emphasized in the future because of the fact that the firm's market share of the domestic markets for ploughs (20-25 %) is falling. This is especially due to new domestic competitors: it is typical for the industry that during depressions a number of miscellaneous works enter the markets with low quality - and low price - ploughs.

The firm has had market research done in the markets in Latvia, Lithuania and the UK too, though the benefit from these has been according to the manager smaller than from personal visits to these potential destination countries. Uncertainty related to exporting to Estonia is clearly smaller than in the case of Norway. This is because the firm also has a work shop in Estonia and by that means knows the markets reasonably well. Markets in Sweden bear greater uncertainty, and businesses there are not established. The firm has also set out to invest in an export project in Scotland by developing quality certification and by improving the knowledge of English in the firm.

4.3.5. Firm Case E

Firm E produces tools (large moulds for compression of plastic and rubber) for automobile and refrigeration equipment industries. The exporting of these highly customized tools brings the small firm (Ltd, 35 employees) about 70 per cent of its turnover. As this business has grown strongly over the last few years, the share of other products (thin sheet metal plate products) has decreased into 20 per cent of the turnover. Geographically the firm's principal market area consists of the Nordic countries. Also the exports to other European countries have been initiated through large refrigeration equipment manufacturers in the Nordic countries. The active export operations have started only in 1994: in addition to this reentry in the exporting markets the present case study focuses on the firm's exit from the markets in Sweden in 1992.

The central motivation for the export orientation of the firm are the large fluctuations in the domestic demand. The firm has established and long-lived customer relations in the home-markets. These result mainly from the fact that the firm not only produces but also designs the tools to offer, and is able to supply entire production lines. In the beginning of the 1990s it was typical for the operations of the firm that the domestic demand for moulds strongly varied in term of about two years. This was due to smallness and high level of concentration of the customer industries, and the fact that the designs of cars and refrigeration equip-

ment are not renewed on a yearly basis but more infrequently. For the fluctuation in demand the recently renewed machinery and production capacity of the firm were from time to time in full use, and clearly under utilized at other times. The management of the firm considered two possible solution to the problem: either to search for new products for the production of which the technology could be applied, or to extend marketing of tools geographically to abroad. In 1992 the firm had without its own initiative export deliveries to Sweden, and although these had ended before the end of the same year, the firm went on for the internationalization strategy. The exporting markets, where the firm re-entered in 1994, shortly turned out to be a bonanza for the firm: the share of exports of the turnover rose in two years to 70 per cent of the production. Exporting has spread in addition to Sweden to Norway, Poland, Ireland and Denmark.

The first export deliveries in 1992 were arranged by a Danish corporation the sister corporation of which in Finland is run by the manager of Firm E. The entry did not involve any fixed costs. Exporting ended because the customer in Sweden considered the moulds of the firm clearly too expensive and consequently shifted its purchases to Italy. Price was not lowered under the average unit costs so that the exporting remained profitable till the end. To some extent, however, the exporting was at that time also hindered by the red tape, as the firm perceived especially the records related to exporting quite troublesome. Because the firm had no other channels or customers abroad, the exit from exports was inevitable when loosing the customer. The share of exports of the total turnover of the firm

became about 10-12 per cent in 1992.

Since the firm had not invested or prepared for exporting the exit from the export markets did not have any marked influences on the firm. The good demand in 1993 was enough to make the turnover of the firm grow for 36 per cent and the number of employees for 38 per cent from 1992. On the other hand the firm did not endeavour to compensate the exporting by increased efforts in the domestic markets, but started to plan a new entry. The negative feedback from exporting had been directed to the price of the product - according to the client the price had been 30 per cent too high. Although the mark-up in exporting had been extremely good, it was clear to the management of the firm that without a larger volume of production the price could not be lowered to meet this customer's demands.

On the other hand, the firm had got positive feedback on other product characteristics than price, such as quality and reliability of delivery. This led to a strategic decision by the management to solve the capacity under utilization problem by extending geographical markets rather than by diversification of production. To develop exporting the firm invested in the training of personnel and adopted a new more active attitude towards export marketing. The managing director of the firm took a course on export management and the language skills of the personnel were improved by language courses. In potential destination countries the firm had market research done. Although the firm got some support for these activities from a public export support organization the developing of exporting involved

quite marked fixed costs in the firms scale. Because of the investments to develop exporting, risk related to exporting operations were now considered higher than in 1992.

The investments payed off. At first in 1993-94 the firm was exploring the markets in Germany, but failed to enter the markets. However, in 1994 the firm developed at a fair a contact with a large refrigeration equipment manufacturer customer in Sweden, which led to an agreement on supplying moulds for this large firm. The business ensued surprisingly easily which lead to further measures to expand international operations. In two years the firm entered markets in 4 new export destinations, and the share of exporting of the operations of the firm rose rapidly: in 1995 the share of exports of the turnover was 55 per cent and in 1996 already almost 70 per cent. Mainly due to the increase in exports the turnover increased by 80 per cent and number of personnel by 25 per cent in 1995. In the following year, the turnover grew only by 5 per cent due to the fact that the production capacity was now to a large extent in full use. The increase in volume has been reflected in lower unit costs and contributed to the profitability of the firm above all by making it more stable than before.

4.3.6. Firm Case F

Firm F is a privately owned engineering works (limited partnership company) in

the countryside. It employs less than 10 employees. Today the firm's main product is a feed cutting machine. This analysis however focuses on a turning machine for building timber, which has been developed and patented by the firm. The product was exported mainly to Russian Karelia in 1992-94. Since this round wood based technology is not common in the Western countries, the machine has been only produced and sold to offer in the domestic markets, and in Russia and Czech Republic. The competing technology is to plain the log smooth, requiring the log to have already been worked roughly once. The domestic markets for the special log lathes are only about 20-30 machines a year.

The export history of the small firm is peculiar. In 1992, when the firm started, the share of exports of the total turnover of the firm was about 5 per cent. In 1993 it reached 60 per cent, and in 1994 when the exporting operations ended, the share was 25 per cent. The peak of exporting in 1993 was due to the delivery of 4 log lathes and a few smaller products to Russia. In 1995 the reactive exporter did not get any more orders from abroad and so the exporting ended. Markets for the lathes are geographically limited by the supplementary services, such as a guarantee service, supply of spare parts and preliminary training how to use the machine. These services are difficult for a small firm to carry out where the markets are at a great distance.

The main reason for the exit from the export markets was the fact that the firm had no export strategy but was only responding to unsolicited orders. The two

central problems were, firstly, failure to find the right export channel and customers, and secondly, the unstable economic situation in Russia (liquidity crisis of potential customers). The creditworthiness of customers caused great uncertainty, which was tried to minimize by requiring prepayments and using middlemen in the export businesses. Some of the businesses were also bound to the US dollar to decrease the risk related to the exchange rate. The exporting was also hindered by inter-country differences in regulations on safety at work and safety of electrical apparatus, as well as the lack of language knowledge in the firm. In addition, according to the manager, myopic speculators spoiled some of the reputation of Finnish firms in Russian Karelia in the early 1990s, which may have influenced the ending of orders.

The exit from exporting did not cause any marked losses for the firm, since the investments to export markets were minimal including only a few product brochures and a video in English, smaller costs from acquiring information on potential customers and minor travel costs. Lathes were not sold under the unit production cost at any point. The firm had, however, problems with the creditworthiness of customers not only in Russia but also in Czech Republic. One of the exported lathes is still there in the possession of the customs because the customer was not able to pay for it. The firm has tried to resell the machine at the site since bringing it back to Finland would be costly. Sending assemblers to assemble the machine and to train the customer to use the machine in 1994 already cost the firm about 25 per cent of the value of it.

With the help of its smallness and flexibility, the firm has been able to adjust its production according to demand in an extraordinary way. In 1993 a marked share of the turnover (almost 60 %) came from exporting of lathes. Yet the end of exporting of lathes in 1994 could be replaced fully by sales of lathes and other products at the domestic markets in 1994-95. Despite the end of exporting the turnover of the firm grew nominally for 64 per cent in 1995, most of which came from other products than the lathes. Financially the exporting had been very profitable, and also contributed to the skills of the employees and quality of the product. In addition it helped the firm to get rid of its image of a village blacksmith, which has had a positive influence on the firm. The end of exporting however caused a designer to leave the firm.

Afterwards the firm also explored markets for the lathe in Canada, where the round wood technology is being used yet to a smaller extent. The aim to enter the markets was however abandoned because it would have required sending a sample machine to the destination without a guarantee of getting a single order. The value of the machine would have been about 10 per cent of the turnover in 1996. The firm considered the risk to be too high and has since then focused on the domestic markets.

4.3.7. Firm Case G

Firm G (Ltd) is a part of a domestic group of companies (Ltd) in the contract manufacture of electronics. It has more than 200 employees today. The firm produces no physical products of its own but the product is basically the assembly work in the production of circuit boards. The most important customer for the firm is Nokia Telecommunications Plc, the success of which has resulted in a very fast growth of the firm since 1993. In terms of the nominal turnover the growth has exceeded 50 per cent a year for the last four years, and the personnel has also more than doubled since 1993. As to direct exports, it is restricted to supplying a circuit board to a customer Sweden in 1992-93. Today the firm has not direct exports of its own, although it has adapted itself quite far into the international operational environment. About 95 per cent of the circuit boards produced end up in export products and the firm itself purchases components directly from international markets.

The export deliveries in 1992 started when a customer of that time, Oy Abloy Ab, “sold” one of its products (a fireproof door closing mechanism) to its Swedish subsidiary. The transfer of production to the Sweden-based firm did not change the supplier of circuit boards but acquiring these from Finland continued. Before long the needless intermediary was removed and the Swedish affiliate started to order the circuit boards directly from the manufacturer. The meaning of exporting was very small for the firm G, since the deliveries abroad formed only a fraction

of the turnover (0.25 per cent).

Exporting ended when the Swedish firm ceased making the closing mechanisms in 1993. Firm G had been conscious of the life-cycle of the product already when the deliveries changed to exporting, for which reason the exit from the markets did not come as a surprise for the firm. The firm had not made any investments to develop export operations either. As the volume of exporting had also been very small, the exit hardly had a noticeable influence on the operations of the firm. Besides, the strongly increasing demand by Nokia totally drew the firm's attention. Notwithstanding the ending of exporting the turnover grew by about 10 per cent in 1993 and the net profit improved by a factor of 3.5 from the previous year. The exporting was however found to be feasible and possibly competitive.

In the mid-1990s, the firm cautiously started to search for new exporting possibilities. The aim is to create growing and continuing customer relations through foreign subsidiaries of Finnish large firms. The idea is based not only on the export experience gained in 1992-93, but on the fact that there are economies of scale in the production of circuit boards that can be utilized through international trade. Lower unit costs due to an increase in volume through exporting benefits the customer especially if the foreign affiliate company produces the same products as the parent firm. From the firm's point of view, there is also less uncertainty related to starting exporting through this channel than by marketing the assembly work directly to foreign customers. Overall, however, the firm is

rather conservative in these aims since the growth in the domestic markets, i.e. Nokia Group, still takes the central attention of the firm.

4.3.8. Firm Case H

Firm H produces teaching equipment and fixtures for natural sciences laboratories. This limited company has about 15 employees and it is a part of a local group of firms that includes, among other things, a printing plant. The products and their main markets form two primary groups: fixtures, the markets of which are limited into the nearby countries (Nordic countries and Russia), and teaching equipment for which the potential market area is the whole Europe. The firm had exports in 1994, and after a year break again since 1996. Both periods are results of the same internationalization strategy.

It is essential in the industry to be able to supply almost everything from the equipment to other teaching materials needed in a natural science teaching laboratories. Consequently, the firm H has more than 20.000 selling lines. The largest European manufacturers have up to 40-60.000 selling lines, only part of which, naturally, are made by the firms themselves. Typically firms are also able to supply tuitional entities for different levels of education from elementary school to university. These reasons make entry into markets difficult. Further, because the teaching programmes are renewed at intervals product development

is a prerequisite for staying as a strong competitor in the industry (Some of the equipment, though, dates from the nineteenth century). The product development is determined by the tuition processes, i.e., the pedagogical usefulness of the products: normally the products are extremely simple for their appearance.

The firm has increasingly invested in development of exporting from 1992. Exporting is hindered especially by technical barriers and differences in tuition programmes. It may take a couple of years to take in a particular country's tuitional organization. This implies that positive returns may be expected only after irreversible investing has continued for a while. Once the particular tuitional organization has been embraced and products adjusted accordingly the costs become markedly lower. The firm H has incurred costs especially from market researches, advertising and marketing materials and visiting a number of trade fairs abroad. Some of the market research has been carried out by the firm itself: there are normally only a few firms operating in the markets in each country and the branch is typically well organized. In addition the demand is reasonably easy to forecast since this is primarily determined by state budgets: teaching laboratory materials are almost to the full public procurements. For these reasons the direct costs of developing exporting have not been, on average, more than a per cent of the yearly turnover since 1992.

The firm started to develop exporting actively to Sweden in 1992. It took however almost two years before the firm got the first export order in 1994. During

the same year the firm also had a one-shot delivery in a building project to Russia. Unfortunately the import company in Sweden went bankrupt before the end of the year and so the exporting was interrupted. In addition to the above mentioned factors the exporting was to a smaller extent hindered by higher risks related to exporting operations compared to domestic operations. Together the value of these export operations was between 3 and 5 per cent of the turnover of the firm. The firm started to look for a new export channel in Sweden immediately after the bankruptcy. The deliveries in 1994 took the firm a bit higher on the learning curve but economically the returns were clearly negative at that point. Products were priced profitably, though, but the investment did not have time to pay for itself.

The temporary withdrawal from the export markets did not have any significant impact on the firm. This was mainly due to the fact that the demand in the domestic markets was higher in 1995 than in 1994. Despite the absence of exporting the turnover rose from 1994 to 1995 for 23 per cent, while profitability remained stable. The firm did not however transfer its attention away from export marketing but continued the development of exporting operations. The markets in the Netherlands were taken as the next target after Sweden. The firm also started to hire and train personnel taking into account the internationalization aim.

However, it took no less than till 1996 before the exporting to Sweden continued.

Due to the bad experiences in Sweden prudence and carefulness in operational

planning of exporting increased. The most important source of uncertainty was however related to the skills of the personnel: getting familiar with the tuition programmes in different countries is a demanding task for a small enterprise. Instead, the uncertainty outside the firm was quite far limited to a choice of cooperative partners abroad. No risk is related to the exchange rate as it is typical for the industry that the export business is done in domestic currencies. Also the industry demand is easy to forecast since it is basically tied to two factors only: term timetables and public investments in education.

The firm re-entered the markets in Sweden in 1996, almost two years from leaving the markets. In the same year it got the first export orders from the Netherlands. Exporting accounted for about 4 per cent of the turnover in 1996 the total nominal growth of which was 38 per cent from the previous year. Today (1997) the firm has minor exports also to some other European countries and Russia. Expertise in exporting has clearly risen, and the market spreading strategy has helped to lower the risk related to export markets. Consequently, the share of exporting of the turnover is expected to grow fast during the next few years.

4.3.9. Firm Case I

Firm I produces wooden windows (approximately 65 per cent of the turnover) and doors (35 per cent of the turnover). The number of employees in this limited

partnership company is about 30. The most important group of customers for the firm are private detached houses, but marketing is directed also towards terraced houses and building companies. Geographically the markets of the firm include the whole Finland, but very recently the firm has also had exports to Russia and the Baltic countries. In this case study the focus is on exporting of a by-product, laminated wood board, to the markets in Germany in 1995.

The idea of exporting came into being in the firm in 1994. The demand for windows and doors had been low for years because of the extended depression of the construction business. Competition had also increased because an important rival for the firm had got an advantage over the firm in a state supported reorganizing arrangement to avoid a bankruptcy. Consequently, the firm was threatened by a need to give employees a notice to leave. To avoid this situation the firm considered a possibility of producing and exporting laminated wood board, that could be produced as a by-product. The stimulus for the export trade was a newspaper advertisement in which a German client was searching for a supplier on a year contract basis. The agreement, which was to stay the last, was born in less than 6 months from the very beginning of the whole exporting idea. For the export product the firm acquired a particular clamp the value of which was about 3 per cent of the turnover in 1995. The entry to exporting did not involve other marked costs.

However, only 5 monthly lots were shipped before the end of the exporting.

Strong uncertainty that was related on one hand to the German client's behaviour, and on the other to the exchange rate begun soon after the start of exporting. Only the first 2 of the deliveries went smoothly, but after that the client started to demand, at the same price, larger boards that were more difficult to produce. This increased labour costs in making the laminated wood for which reason exporting took a turn for the unprofitable. Because of the fact that the external value of Markka was at the same time rising, continuing exporting under the contract would have clearly been at a loss. According to the manager of that moment, a 5 per cent improvement in the exchange rate experienced already could have made the exporting profitable again. The firm did not however believe this would happen, but brought the problem of interpretation of the contract to a head and stopped deliveries to Germany. The total value of the 5 deliveries was about 5 per cent of the turnover, which itself showed a 3 per cent increase in 1995.

Before the ending of exporting it had been continued at a loss for 2-3 months, i.e., 2-3 deliveries. The reason for continuing the exporting at a loss was that the firm expected it to be continued under a better contract, and that the clamp had been procured for the exporting in particular. According to the managing director of that moment there were export markets for laminated wood, but for a small producer as Firm I exporting would not have been unprofitable at the exchange rate of that moment. For this reason the firm did not try to enter markets elsewhere in Europe. On the other hand, the exporting of doors or windows to the West European countries was thought to require development of a particular

range of patterns, for which the idea was abandoned.

The firm endeavoured to compensate for the exit from export markets with domestic sales of windows. Despite every effort the turnover decreased for 10 per cent in 1996 from the previous year. In total, the returns from the export trial were negative though the loss was minimal. The amount of sunk costs that will materialize from the special clamp depends on whether the clamp will be sold secondhand or not. So far the trials have been unsuccessful.

The firm re-entered export markets, this time in Russia and the Baltic countries, with its main products in 1997. The new managing director of the firm played a crucial role in restarting of exporting, and the first export businesses have come into existence through his personal contacts. The manager had earlier been conducting window factory projects in Estonia and had by that means both market knowledge and important contacts in the destination countries. Confidence in the positive development of exporting is now much greater than in the case of exporting the wood board. Large risks related to exporting into the former state socialist countries are minimized radically by requiring 100 per cent payment before the products are supplied and by doing business only in Finland's Markka. In the first half of the 1997 the exporting was mainly directed to Estonia, and it brought about 5 per cent of the 6 month's turnover. The overall emphasis is however still in the domestic markets: the total turnover is expected to grow for about 50 per cent in 1997. As such the exporting does not improve profitability of

the firm, since the mark-up in exporting is kept at the same as in the domestic markets. The firm has increased the number of employees by 20 per cent from 1996. This is mostly due to the expansion of sales on the domestic markets: the direct organizational changes for the exporting are limited to hiring one person who is fluent in Russian.

4.3.10. Firm Case J

Firm J is a privately owned (Ltd) engineering works that employs about 20 employees. The firm manufactures demanding precision machining parts which are either bespoke or produced in small series. The customers include 5 large firms in Finland, the most important of which are Wärtsilä Diesel International Ltd and Valmet Oy (Plc). The competitiveness of the firm is mainly based on the high quality of the production and established customer relations. This competitive edge has been strengthened over the last years by a strategic decision to focus on the main business (demanding machining parts) and by lopping off the number of customers.

About 80 per cent of the firm's production ends up in export products through the domestic customers. The export history of the firm is short and comprises only a delivery of a series of machined parts to France in 1995. The firm has never aimed at exporting itself but the deliveries were based on an unsolicited order by

a French subsidiary of the Wärtsilä Diesel International Ltd. The machined part exported was similar to that supplied for Wartsila in the domestic markets. For this reason the exporting did not require special attention regarding production. It did not influence the volume of businesses much either, since the value of it was only about 1 per cent of the year's turnover. Exporting was however expected to continue and grow because there were demand for several other machining parts as well. Exporting to a larger extent would have been advantageous for the firm because it would made possible greater series and by that means lower unit production costs.

There were two main reasons for the end of exporting. Firstly, the customer's payments were delayed which put the firm's liquidity situation to test and looked from the point of view of the firm as if one of the risks related to exporting operations was going to materialize. The firm's claims for the machined parts supplied were eventually met 8-9 months late, with help from lawyers. Secondly, fast growing domestic demand kept the firms capacity in full use in 1995. As a clear indication of that, the firm's turnover grew nominally from 1994 to 1995 by about 40 per cent and with regard to the main business even more than this. Also profitability developed very positive in years 1995 and 1996. In addition to the above mentioned reasons, the attractiveness of exporting was lowered by a language problem since the customer was not willing to use English as a business language.

The firm continued exporting despite the delays in payments for 3-4 months. Eventually the losses were however limited to smaller collecting costs and to the loss from unpaid interest on arrears. As such the mark-up in exporting was very profitable. The firm had not invested in exporting in beforehand, i.e., the entry in the markets was costless. Neither did the firm perceive any particular risk related to the exporting in comparison to deliveries for domestic customers. This was because the quality of the product and reliability of delivery had been acknowledged by Wartsila, and because the orderer was an affiliated company of Wartsila.

Because of the exit the risk related to new exporting is perceived as higher by the business manager of the firm even if the liquidity situation is nowadays much better than in 1995. Public services such as state export guarantees, which were not used in 1995, could however be used to minimize the direct risks. Thus, although the firm does not aim at exporting, it is according to the manager likely that it would reply to unsolicited orders from abroad.

5. Analysis of the case study data

5.1. Method of analysis

The analysis uses so-called pattern matching logic (Yin 1994, 106-119) which is

one of the most preferable research strategies for case study analysis. In this technique the case study data is analysed by comparing an empirically based pattern with a predicted one (Yin 1994, 106). The present study is not only descriptive and exploratory, but also explanatory in its aim to pose competing explanations for the same set of events and to indicate how such explanations may apply to other situations (see Yin 1994, 4-5). The data has been analysed, firstly, by within-case analyses the purpose of which is to gain familiarity with data and produce preliminary theoretical considerations, and secondly by cross-case pattern search to look beyond initial impressions and view evidence from multiple points of views (see Eisenhardt 1989, 533). The preliminary suggestions presented in Table 1 were shaped by replication, not sampling, logic across the cases until they could not be improved by exploration of the data. In Section 6 the findings will be compared with experiences of committed exporters that have been exporting uninterruptedly since the start of their exporting to increase the validity of the findings. Like experimental studies, case studies are generalizable to theoretical propositions and not to populations or universes (Yin 1994, 10).

5.2. Domestic demand and the exchange rate

Figure 2 represents the development of the exchange rate for the Markka (trade weighted; dark curve) and the domestic demand (the constant prices index for private final consumption; lighter curve), together with the export periods of the

10 firms. Although the trade weighted exchange rate does not perfectly reflect changes in the export competitiveness for individual firms, it can be assumed to be a good estimate of those changes: most of the firms have been operating on the West European markets that are by far the most important export destination for Finland⁵⁵. The developments in the exchange rate and the domestic demand do indeed coincide strikingly with the export behaviour of the firms. In particular, none of the firms under study had exports at the turn of the decade, when both the external value of Markka and the domestic demand were at their high, whereas Firms A-H entered export markets between the end of 1991 and 1994 when the external value of Markka and the domestic demand were both low.

A scrutiny of the case study data reveals that for two (B and C) of the four firms (A-D) that exited export markets before the turn of the decade both the exchange rate (or high level of domestic costs) and the rise in domestic demand contributed to their exits from export markets. In the case of Firms A and D, price competitiveness did not directly influence the exits, but of the two factors, the domestic demand only contributed to the exit. An increase in the domestic demand contributed also strongly to the exits in the cases of Firms B and C.

⁵⁵On the other hand, in trade with Russia (The Soviet Union) the meaning of price competitiveness has become important only in the 1990s when trade with freely exchangeable currencies started. Until then the most important single factor influencing the volume of trade between Finland and the Soviet Union was the dollar price of crude oil imported to Finland under the clearing system (Rautava 1995).

Notwithstanding Firm B, in the cases A, C₈₇ and D the exits were involuntary. In these cases the firms were dependent on one customer abroad or lost their distribution channel due to local developments in the export destination. However, when considering re-entry after the cessation of exporting it seems as if the firms found it more worthwhile to focus on the domestic markets. What makes this behaviour worth noticing is that it coincides with the view that there are different trigger prices for entry and exit in the presence of sunk costs. In particular, the level of exchange rate towards the end of 1980s did not lead to action to leave the export markets, whereas, on the other hand, the same level was not good enough to induce reentry by these firms to export markets. Intuitively, the entry trigger to exports must also have been raised by the buoyant state of demand in the domestic markets.

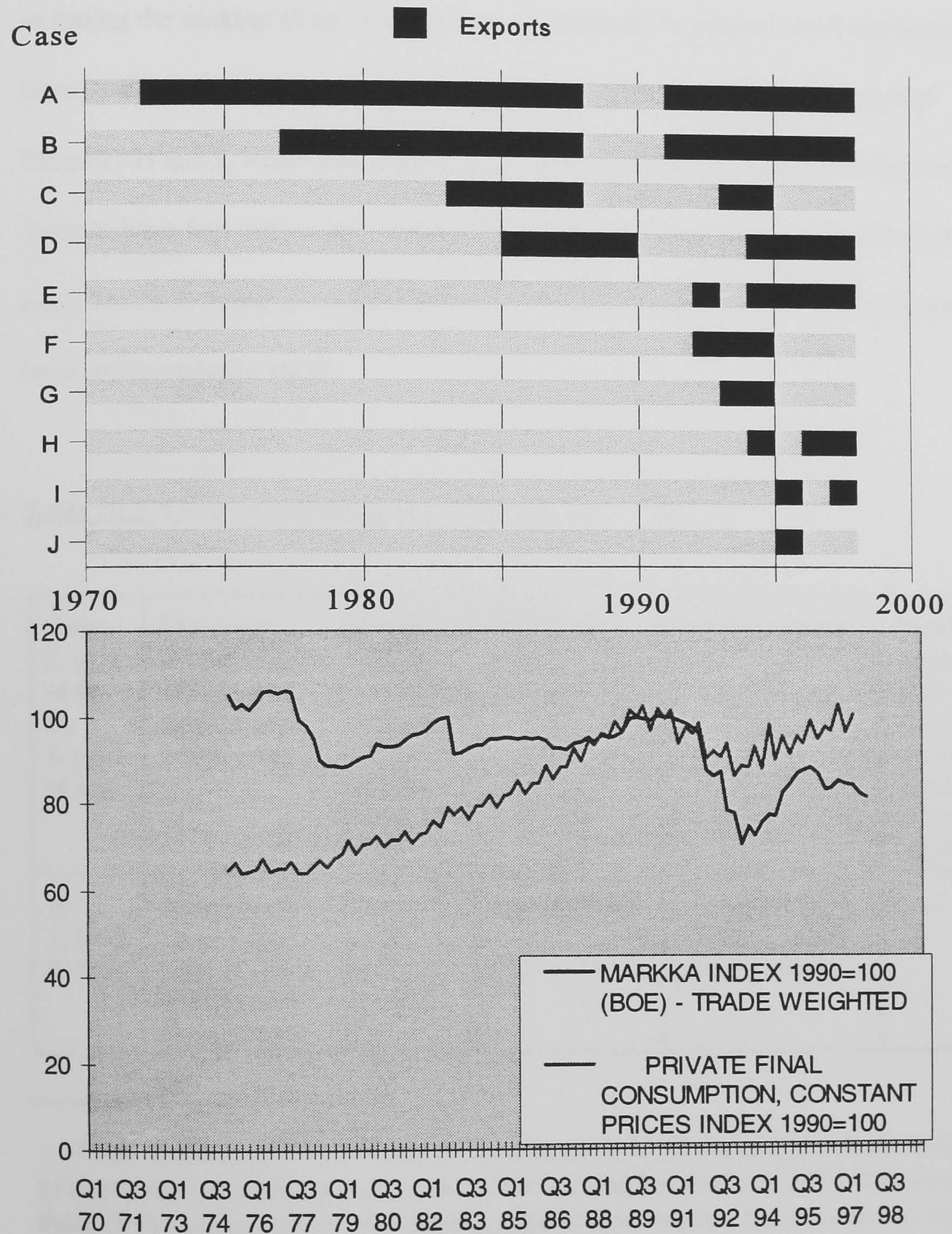
As to exit and entry by the firms in the 1990s, the improvement in external competitiveness due to the devaluation of Markka coincides with the entries by Firms A - H between the end of 1991 and 1994 (Figure 2). Yet, on the basis of the case reports, the simultaneous depression in the domestic markets had a significant positive influence on Firms A, C, D and I decisions to enter export markets⁵⁶. In these cases the firms were more or less obliged to search for markets abroad in order to compensate for the decline of the home markets. The exits by Firms C, F-J took place at the time when Markka was gradually revaluing and the domestic

⁵⁶In addition, the unsuccessful attempt to enter the markets in Sweden by the firm C in 1990-91 was motivated by the depression in home-markets.

demand, on average, slowly recovering from the slump. In fact, however, only Firms C and I made the exit because of the poor profitability of it, whereas in the cases of Firms G and J it was the increase in the domestic demand that essentially contributed to the exits. Further, in the cases of Firms F and H neither of the factors explicitly influenced the decision-making of the firm. Of course, one cannot exclude a competing explanation that the exchange rate would indirectly have had impact on the exits in these cases as well.

Hence, overall, the case study data and Figure 2 suggest that there is large variation between the cases in how the exchange rate and the domestic demand have influenced making an exit from exporting. What the findings however clearly suggest is that a cost of exporting should be taken as an opportunity cost: as the exits by some of the firms show firms may choose to concentrate on the domestic markets even if exporting is likely to be profitable. Conversely, this fact suggests that factors other than exchange rate (or price competitiveness) as such are important determinants of export performance.

Figure III.2. Export periods of the firms, domestic demand and the exchange rate in 1970-97⁵⁷



⁵⁷The time series on the trade-weighted exchange rate and the private final consumption only available from 1975.

5.3. Costs of exporting and timing of exit

Table 3 considers the costs of export development and the meaning of sunk costs in timing the making of an exit from export markets. In general the firms have been involved in exporting in reasonably low-cost ways. Only in the cases of Firms C, H and I, which had deliberately entered exporting markets do the costs seem to have had some importance. On the other hand, in those cases where the entry has been based on unsolicited orders the fixed costs from exporting have been unsurprisingly small.

Table III.3. Costs of exporting and timing of the export exit

Case: 1. year of en- try 2. year of exit	The main sources/ sig- nificance of costs in an initial entry	Length of time the firm contin- ued ex- porting on a loss	Total profit- ability of ex- porting	Possible reentry	Signifi- cance (INV) and sunkness (SUNK) of investments to export- ing 1996⁵⁸
A: 1. 1972 2. 1987	outlays from sustaining good relations with the cus- tomers (low)	-	very profitable	re-entry in 1991 (different group of customers)	(na.)

⁵⁸The numbers (INV, SUNK) are assessments by the managers on the total costs of exporting incurred *up to the time of the second interview in 1996*. The first one of these (INV) concerns the total significance of investments (fixed costs) to exporting in the firm's operations, and the second one (SUNK) the ability to utilize these investments in the domestic operations if the firm were to make an exit from export markets. Both of the assessments are given on an integer scale from 1 (low) to 5 (high).

B: 1. 1977 2. 1987	product adaptation (low)	-	profitable	re-entered in 1991 to the same and later different destinations with higher inputs	(3, 4)
C: 1. 1983 2. 1987 (a try in 1990-91) 1. 1993 2. 1994	market research by a consultant, search for a cooperative partner, travelling (moderate) market research by a consultant, search for a cooperative partner, travelling (moderate) product adaptation, search for a cooperative partner by a consultant, travelling (low)	- - -	profitable - profitable	an attempt in 1990-91 to the same destination re-entered in 1993 to the same destination -	(2, 2)
D: 1. 1985 2. 1989	travelling (low)	-	profitable	re-entry in 1994 to another destination with different products and higher inputs	(3, 4)
E: 1. 1992 2. 1992	(na.) (low)	-	profitable	re-entry in 1994 to the same and later different destinations	(2, 4)
F: 1. 1992 2. 1994	marketing material, acquiring information on potential customers and travelling (low)	-	profitable; a small loss will materialize later from an unpaid export delivery	an attempt in 1996 to another destination	(2, 5)

G: 1. 1993 2. 1994	(entry costless)	-	profitable	re-entry possible: the firm aims at exporting in a longer term	(1, 5)
H: 1. 1994 2. 1994	market re- search, market- ing and adver- tising material, product adap- tation, travel- ling (moderate)	-	unprofitable at that point since the irre- versible in- vestments made for ex- porting did not have time to pay for it- self	re-entry 1996 to the same and different destina- tions by increas- ing inputs	(2, 3)
I: 1. 1995 2. 1995	acquiring spe- cial machine for the export product (mod- erate)	2-3 months (2-3 de- liveries)	close to zero, additional loss will material- ize later the amount of which will depend on secondhand sale price of the clamp	re-entry in 1997 to another desti- nation with dif- ferent products	(na.)
J: 1. 1995 2. 1995	(entry costless)	contin- ued ex- porting despite the de- lays in pay- ments for 3-4 months	collecting costs and un- paid interest on arrears de- creased total profits from exports	re-entry possible but the firm does not develop ex- porting actively	(na.)

The firms have incurred costs to develop exporting from market research, search for distribution channels, export specific investments to production and product adaptation, marketing material and advertising abroad, travel and the keeping up

of relations with customers. These outlays are likely to be to a large extent sunk. This is because they are irreversible, there are in general no second hand markets for the investment projects, and the firms' can make little use on these investments in their domestic operations. Thus, the nature of costs is in line with the view that entering foreign markets involves a sunk cost. However, as mentioned above, the significance of the costs have in the firms studied here generally been small, and in some cases indeed non-existent. It is also rather unclear to what extent these costs are exit costs. Thus, it is by no means surprising that only Firm I continued exporting for a while making a loss. Further, a sunk cost is not a necessity for a firm to engage in export business.

Another interesting feature in the firms' behaviour is that with the exception of Firms F, G and J they have made a planned re-entry to export markets. The findings do not, however, suggest that a re-entry would necessarily need to involve increased investments in exporting. A firm can become a reactive exporter or a non-exporter after being involved rather actively in exporting, as the case of Firm C shows. On the other hand, some firms may find it convenient to continue exporting with a reasonably opportunistic attitude, as the case of Firms J shows. This implies that the export market behaviour of at least some smaller manufacturing firms might be better explained by economic factors beyond the hysteresis hypothesis, such as those of the "strategic markets" approach.

5.4. Uncertainty

Table 4 considers the type and (the managers' perceptions on) the degree of uncertainty related to exporting operations. Sources of uncertainty that mainly lie outside the firms include export channels and cooperative partners abroad, an unstable economic situation in the home-markets or in destination countries, exchange rate, and a competitive situation in the export markets. Factors that are related to the firms own organizations are difficulties with foreign languages, insufficient skills of personnel, and a lack of foreign market knowledge. The managers' assessments of the degree of uncertainty vary from small to moderate risk. This suggests that the firms have not made their investments to exporting, if any, in an especially uncertain environment.

Table III.4. Uncertainty related to exporting

Case	Export period; Main sources for uncertainty related to exporting	Source of uncertainty inside / outside the firm	Risk related to investments to exporting (RISK) ⁵⁹
A	1972-1987: decrease in the bilateral trade between the Soviet Union and Finland from the mid-1980s, increasing instability of political and economic situation in the destination country, increase in competition in the export markets 1991-: instability of political and economic situation in the destination country, liquidity crisis and creditworthiness of the new group of customers (private sector)	outside outside	(na.)
B	1977-1987: a language problem, problems in product adaptation 1991- : unstable economic situation in the home-country: exchange rate, labour costs, taxation	inside outside	(3)
C	1983-1987: a language problem, foreign cooperative partners 1993-1994: foreign cooperative partners, exchange rate	inside/ outside outside	(2)
D	1985-1989: lack of language knowledge, lack of market knowledge for other products 1994-: na.	inside	(1)
E	1992: the customer's claims about the price of the product 1994-: insufficient market knowledge, aims of an important foreign customer to shift production to another country	outside outside	(2)
F	1992-1994: unstable economic situation in the export destination and creditworthiness of customers, lack of proper export channel, lack of language skills, technical barriers to trade, exchange rate	inside/ outside	(2)
G	1993: no obvious uncertainty	-	(1)

⁵⁹Riskiness of investments to exporting (1 low risk - 5 high risk) evaluated by the business managers in the 1996 interview.

H	1994: inter-country differences in tuitional organizations, skills of the personnel 1996- : inter-country differences in tuitional organizations, skills of the personnel, choice of a cooperative partner	inside inside	(2)
I	1995: conflict over the contract with the foreign customer, exchange rate 1997-: unstable economic situation in the export destinations and creditworthiness of customers	outside outside	(na.)
J	1995: delays in the customer's payments, a language problem	outside/ inside	(na.)

In the cases of Firms A, E, and I the uncertainty during the first export market period had mostly been related to factors that lie outside the firms, and in cases of the firms B, D and H factors inside the firms. In the cases of Firms B, C, D, E, H and J the uncertainty related to the first entry to exporting has been quite clearly specific to the firm, whereas in the cases of Firms A and F it has involved factors that are specific to the export destination (Russia). There are however no salient common features in the investment, exit or reentry behaviour of firms B, C, D, E, H and J (firm-specific uncertainty) that would make them obviously different from Firms' A and F (destination specific uncertainty) behaviour (Tables 2 and 3). Neither does the behaviour of Firms B, D and H (firm-specific uncertainty due to factors inside the firms), differ saliently from the behaviour of Firms A (destination related uncertainty due to factors outside the firm) or E (firm-specific uncertainty due to factors outside the firm). This simple categorization suggests that the type of uncertainty has not influenced the export market behaviour in any recognizable way. Naturally, an alternative explanation is that the uncertainty

always is to some extent firm-specific as a firm's way of handling and responding to the uncertainty is specific to its organization. As to the suggestion in Table 1 about the type of uncertainty in strategic and unplanned entries, I will deal with that below in the context of Table 6.

5.5. Practical trigger mechanisms

In seven of the cases (A, C₈₃₋₈₇ and D - H) the making of an exit from export markets has taken place reasonably unexpectedly from the point of view of the firms. Put differently, in these cases the end of exporting has not been a deliberate decision by the business management. In the four cases where the exit has been a voluntary one, one can distinguish three factors that have triggered the decisions to exit. These are an increase in uncertainty (I and J), revaluation of Markka (C₉₃₋₉₄, I), and an increase in the domestic demand (B). On the basis of the data it is not possible to distinguish critical values in these triggering factors. The analysis of triggering factors is presented in Table 5.

Table III.5. Trigger mechanisms in exiting exporting

Case	Year of exit; The main reasons for withdrawing from exporting	The factor triggered the exit decision
A	1987: gradual termination of bilateral trade between the Soviet Union and Finland, unstable political and economic situation in the destination country and liquidity crisis of potential private customers, increase in competition in the export markets, growth of domestic markets	-
B	1987: growth of domestic markets, lack of export strategy, high domestic level of costs and prices, a language problem and problems in product adaptation	increase in domestic demand
C	1987: bankruptcy of the foreign cooperative partner, growth of domestic markets, a language problem, high domestic level of costs and prices, higher risks than in domestic operations 1994: unfavourable gradual change in the exchange rate	- exchange rate
D	1989: increase in competition in the export markets, failure to find customers for other products in the destination, growth of the domestic markets	-
E	1992: the only foreign client transferred its purchases to a cheaper supplier in another country, difficulties in finding export channels and customers abroad, high domestic level of costs and prices	-
F	1994: lack of export strategy and failure to find the right export channel, unstable economic situation in the export destination and liquidity crisis of local customers, lack of language skills, technical barriers to trade	-
G	1993: end of the life-cycle of a product supplied to order, lack of other customers abroad, growth of domestic markets	-
H	1994: bankruptcy of the import company, difficulties to find other customers and export channels, higher risk related to foreign operations than to domestic operations	-
I	1995: increase in labour costs during the first annual contract, conflict over the contract, unfavourable change in the exchange rate	uncertainty, exchange rate
J	1995: delays in the customer's payments which caused problems in financing the exports and steeply increased risk perceived by the firm, growth of domestic markets, a language problem	uncertainty

The factors can be thought to have been reflected in the export market price of the product and the firms to have left the market at some point when the exports became unprofitable. Yet it is striking that only Firms' I decision to exit was explicitly due to the unprofitability of exporting. On the other hand, the finding that in majority of the cases the exit have not been voluntary or involved any trigger that would have stimulated the managements' decision to exit, is worth emphasizing. This is because it suggests that a large share of export market exits by smaller manufacturing firms may lie beyond the explanatory power of the hysteresis hypothesis, which in general assumes that the exit follows from the exporters decision to exit. Specifically, the timing of the exit has not been determined by the exiting firms in many of the above cases. Rather, it has been determined on the demand side.

5.6. Patterns of exit and reentry behaviour of the firms

Table 6 summarizes the patterns of exit and entry behaviour of the firms. To make it easier to make cross-case comparisons over the patterns these have been marked using letters as abbreviations. As to the sunk cost hysteresis, the pattern suggested by the sunk cost hysteresis hypothesis is either HW or MW (high or moderate sunk costs to enter the markets, waiting on a loss before exit) or LE (low entry costs, exit without operational losses). The two latter letters in the first

column refer to whether the export period as a whole has been profitable, and whether the firm has reentered the markets later. As to the second column in Table 6, the pattern suggested in Table 1 for uncertainty is either UI (uncertainty related to an unplanned entry will be due factors inside the firm) or SO (uncertainty related to a strategic export entry will be due to factors outside the firms). The abbreviations are explained in detail at the bottom of the table.

Table III.6. Summary of patterns of exit and reentry behaviour of the firms

Case; export period	Sunk cost hysteresis	Uncertainty	Factors triggered the decisions to exit
A 72-87	LE PR	na.O	domestic demand
A 91-	-	SO	
B 77-89	LE PR	UI	
B 91-	-	SO	
C 83-87	ME PR	Sna.	exchange rate
C 93-94	LE PN	SO	
D 85-89	LE PR	UI	
D 94-	-	Sna.	
E 92	LE PR	UO	
E 94-	-	SO	
F	LE PN	Una.	
G	LE PN	na.na.	
H 93-94	ME UR	SI	uncertainty, exchange rate
H 96-	-	SI	
I 95	MW PR	SO	
I 97-	-	SO	
J	LW PN	UO	uncertainty

Abbreviations: The two first letters in the column "sunk cost hysteresis" refer to the meaning of sunk costs to develop exporting (L low, M moderate, H high) and timing of the exit (E early which approximates the situation where the average revenue AR in exports have been greater than the average variable cost AVC at the time of exit, W waiting which approximates the situation $AR < AVC$ at the time of exit). The latter two letters in the column refer to the total net profitability of exports, i.e., total revenues - total costs (U unprofitable, P profitable) and to possible reentry (R reentry, N no reentry), in the respective order. In the column "uncertainty", the first letter refers to the type of initial entry (S strategic entry, U unplanned entry), and the second to the type of uncertainty related to developing exporting (I main source inside a firm, O main source outside a firm).

In the cases C_{83-87} , H_{93-94} and I_{95} the firms have incurred moderate sunk costs in entering export markets. Of these only the case I_{95} involved a period of loss before the exit. Hence, there is in general very little support for export hysteresis in this data. On the other hand, in the cases of exits A_{72-87} , B_{77-89} , C_{93-94} , D_{85-89} , E_{92} , F and G the firms have incurred only small costs to enter the export markets and their exits have not involved prolonged losses. Thus only the cases C_{83-87} , H_{93-94} and J , where the firms have either entered the exports with moderate sunk costs and left the markets without waiting, or entered without sunk costs and run operational losses before the exit, are (at first sight) in contradiction with the sunk cost hysteresis hypothesis. However, as is clear from above, in case J the exporting was not unprofitable (the price of the product as itself was set above AVC) but the reason for exit was delays in the customer's payments. In the case C_{83-87} exporting was ceased because of a sudden loss of the export channel due to the bankruptcy of the cooperative partner, and not to unprofitability of exporting. Neither was the exit by the firm H based on the decision of the firm, because it as well was due to a bankruptcy of an import company. Hence, overall, due to the opportunistic nature of the export market behaviour of the firms, it seems to me that there is little in the present data that the hysteresis hypothesis could explain.

As to the pattern predicted for the sources of uncertainty in different stages of export development, the empirical evidence largely supports this hypothesis but is not totally consistent with it. Cases A_{91} , B_{77-89} , B_{91} , C_{93-94} , D , E_{94} , I_{95} and I_{97}

provide support for the prediction that an unplanned rather than a strategic entry to export markets involves uncertainty that is due to factors inside the firms. On the other hand, the cases E_{92} , H_{93-94} , H_{96} and J suggest the contrary. As to case J, the uncertainty due to internal factors was reduced by the fact that the product was known to be good of quality and because the customer was a subsidiary of a Finnish firm. In case H (H_{93-94} and H_{96}) the firm operates in a sector in which certain factors reinforce the significance of internal factors for uncertainty in export development (for example, thorough adoption of country-specific tuitional programmes in foreign languages) and lower the significance of external factors for uncertainty (easily predictable total demand and easily available market information). Yet in the case E_{92} there are no obvious potential explanations available for the contradiction between the evidence and the hypothesis. A partial explanation for the modest impact of internal factors for uncertainty in the beginning of exporting might be the characteristics of the manager: through a position as a manager of a foreign firm's sister company in Finland, he or she had earlier experience on international operations and good language skills before the entry to export markets in 1992.

6. Comparison with firms exporting uninterruptedly

In a multiple-case research design the individual cases should be treated in a manner similar to multiple experiments: some of the cases predicting explicitly

similar results (a literal replication) and some contrasting results but for predictable reasons (a theoretical replication) (see Yin 1994, 44-52). The purpose of theoretical replication is to bring out the conditions under which the phenomenon under study is not likely to happen. Following this research strategy, the idiosyncrasies of firms that have made an exit from export markets (presented above) are here compared with those of firms exporting *uninterruptedly* since the start of their export operations. These reference firms have been selected from the database of the study such that they export similar products as the firms that have made an exit from export markets. In total there are 55 firms with export experience in the 76 firm dataset, which implies that the six firms were chosen from the group of 45 firms that have been exporting uninterruptedly since they started exporting operations. A crude half of these 45 firms have started to export before the mid-1980s, two fifths during the latter part of the 1980s, and the rest (three fifths) in the 1990s.

In the previous Section it was concluded that generally the exits from export markets studied here have not been preceded by large sunk costs incurred by the firms to enter these markets. This is because exporting in these firms had either been based on unsolicited orders, or the exporting operations had not been developed to increase the firm's market share in the destination markets or to enter to new destination countries. Obviously, these facts can increase the risk of an involuntary exit from the export markets. Also, changes in the domestic demand and exchange rate were identified as potential factors to have contributed

to the exits. Given these suggestions, I will focus on three main questions in this comparison. Firstly, whether the investment behaviour (sunk entry costs) in the context of export operations differ between the firms that have ceased exporting and those which have not. Secondly, whether the reference firms have entered other destination markets soon after the entry to the initial country. Thirdly, whether the firms shifted emphasis in marketing to the domestic markets during the boom in the late 1980s, and how they have coped with the loss of price competitiveness due to the revaluation of Markka in 1993-95. I will consider each of these questions in turn, but before that I briefly describe the data from the reference firms.

6.1. Six reference firms

Running through the 45 firms produced six firms that export the same or similar products as Firms A (antique-like furniture), B (log houses), F (log lathe), H (teaching equipment and fixtures for natural sciences), I (laminated wood board) and J (machining parts). These six reference firms produce wooden furniture (Firm K), log houses (L), forestry harvesters (M), measuring equipment and reagents (N), laminated wood board (O) and machine tools and machining parts (P) (Table 7). Although the firms do not necessarily form perfectly matched pairs according to the products they manufacture, they do represent reasonably similar environments for international operations. In the following the development of

exporting in the firms will be briefly described. Unfortunately, due to the fact that the managers of the reference firms have not been interviewed specifically on the present topic, the data available on these firms are not as detailed as in the case of Firms A-J.

Table III.7. Six reference firms

Firm (approximate n. of employees in 1996)⁶⁰	Sector	Export product	Destination and time of initial entry to export markets	Num- ber of desti- nations 1995	Share of exports of the turnover 1995	I N V	S U N K	R I S K
K (Lpc) (40)	wood-pro- cessing	furniture	Norway 1980 ^b	5	89 %	5	5	5
L (Ltd) (30)	wood-pro- cessing	log houses	Japan 1972 ^a	10	50 %	4	5	2
M (Ltd) (160)	engineering	forestry har- vesters	Sweden 1989 ^a	11	33 %	4	5	3
N (Ltd) (10)	engineering	measuring equipment, reagents	Japan 1988 ^b	40	89 %	4	5	5
O (Ltd) (20)	wood-pro- cessing	laminated wood board	Germany 1987 ^b	2	75 %	2	2	2
P (Ltd) (30)	engineering	machine tools, com- ponents	Sweden 1988 ^b	3	67 %	1	3	1

⁶⁰Ltd (Limited company) and Lpc (Limited partnership company) refer to the ownership structure of the firms in 1996. As in Table 2, a superscript "a" refers to unplanned initial export deliveries and "b" to a planned entr, and as in Table 3 INV refers to the total significance of investments (fixed costs) to exporting in the firm's operations (1 = insignificant - 5 = very significant); SUNK refers to ability to utilize the investments in the domestic operations in case the firm would make an exit from export markets (1 = low sunk costs - 5 = high sunk costs); and RISK refers to riskiness of investments to exporting (1 low risk - 5 high risk) evaluated by the business managers in the 1996 interview.

Firm K (Limited partnership company) produces wooden furniture that it started to export, initially to Norway, in the year of establishment of the firm in 1980. Exporting was the firm's business idea even at the time it was founded. The manager had earlier worked in a large Finnish exporting firm in the same industry which experience was helpful when setting up the export operations in practice. Within a year after the entry to Norwegian markets the firm entered two other destination markets in Switzerland and France. Today the enterprise is especially dependent on international markets: more than 90 per cent of the turnover comes from exporting. Destination countries as well as design of furniture have changed over the years, mainly because of reproduction by competitors. At present, the firm has exports to 5 countries, where the exports have been organized through local import companies. The most important destinations today are Switzerland and Germany.

Investments by the firm in the development of exporting have been very significant compared to its domestic operations and to a large extent sunk. The investments are also considered by the manager to have been relatively risky. The most important outlays have been investments into new technology, product development costs and travelling expenses.

The share of exports in the total turnover of the firm rose during the depression (1992-93) close to 100 per cent but has since then decreased to some extent (to about 90 per cent in 1995). The gradual revaluation of Markka in 1993-95 and

high indirect cost of labour have significantly weakened the firm's price competitiveness in its main markets in the Western Europe. In response to this increase in competition the firm has invested more in product development and adopted a new wax colour technology, by the help of which some of the lost competitiveness has been restored.

Firm L (Ltd) produces wooden houses. Its first export delivery (based on an unsolicited order from Japan) took place in 1972, but the exports became regular only in the course of a few years when the firm entered markets in Sweden in 1975. An increase in the volume of exporting and a deliberate development of the exporting operations in the firm (for example, establishment of own sales subsidiaries in the most important export destinations) since those days indicate that the firm has adopted the exporting strategy to the full. The exporting, which is the source of about one half of the firm's business, mostly concentrates on five destinations among ten export countries altogether.

The share of exports of the total turnover of the firm has steadily risen from 30 per cent in 1988 to 50 per cent in 1995. To some extent, however, this rise follows from a decrease in the domestic sales due to the depression and increased competition. Actually, not only did domestic demand for the firm drop further in 1995 but also exports were hindered by a decrease in demand due to the revaluation of the Markka. Systematic investments in exporting operations, however, have started to bring results and thus the volume exports is expected to grow in

the future.

The most important sources of costs of developing exporting operations in the firm have been marketing, employing new personnel for exporting and the establishment of sales organizations abroad. The costs have been according to the manager relatively significant in the firm's operations, and the potential to take an advantage on these investments in the domestic markets small.

Firm M's (Ltd) main products are forestry harvesters and transport tractors. Export operations by the firm started from an unsolicited order to Sweden in 1989. This soon led to active development of exporting, because the firm's product was technologically advanced and the firm's principal aim now was to expand the volume of production. Markets in Norway were entered in 1990. The volume of exporting, however, started to grow strongly only in 1993 when the external value of Markka was at low. By 1995 the number of destination countries rose to 11 and the share of exports of the turnover gradually close to 50 per cent in 1996. Exports to the key markets in Sweden, United States and France have been organized by establishing sales subsidiaries in these countries, whereas in other destinations different export strategies are being employed.

The investments made to enter new destinations and to penetrate the old markets have been significant in the firm's operations during the last few years. These have been targeted especially at the building of the export channel (i.e., establish-

ment of the subsidiaries). Also travelling, marketing abroad, product development and hiring new personnel for exporting have brought considerable costs. According to the manager the investments have borne relatively large risks and the possibility of utilizing the investments in the domestic operations is non-existent. The expansion of markets geographically has to some extent taken resources from product development, to which the emphasis is being shifted back today.

Firm N (Ltd) produces high technology measuring equipment and reagents. The firm has focused on research and development activities and the marketing of the products, whereas the physical production of the products has been left to subcontractors. The small enterprise has been a thoroughbred exporting firm from the time it was established through an MBO-type arrangement in 1988. Already in the first year of operation the firm had exports to more than 5 countries. The firm inherited some of the export channels to these countries (import companies abroad) from the previous parent company. On the whole, however, most of the considerable development of exporting activities in terms of entries to new destinations and the development of new export products took place after the firm became independent.

Today the firm has exports to some 40 countries with the share of exports in turnover approximately 90 per cent. During the years 1993-95 the share of exports decreased by a few percentage points, but it is expected to grow to close to 100 per cent again in the near future. From the outset, most important destina-

tions have been Japan, Austria and the UK, whereas the firm's current presence in some of the 40 destinations (such as China) is only strategic and based on their future growth potential.

The development of exporting has involved costs from travelling, marketing abroad, market research and product development. These outlays have been significant in relation to the firm's turnover and, according to the manager of the firm, fully export specific. Also they have borne reasonably high risks.

Firm O's (Ltd) key product is laminated wood board. The firm was established for the particular purpose of exporting in 1987. Even in the first year of operation, a considerable proportion of the firm's turnover came from export markets in Germany and England, and in the early years of the 1990s this share rose rapidly to three quarters of the turnover. Since then the share of exports of the turnover has varied between 70 and 85 per cent, with the low reached in 1992 and the high in 1994.

The initial exports were sold as a result of the manager's experience and contacts with potential customers abroad that he/she had gained in a large Finnish exporting firm. In the course of the years the firm has had exports also to Japan, Belgium, Sweden and Switzerland, but today exporting is concentrated to the main markets in Germany and England. In these countries the firm has solid and established relations with a small number of customers, the most important of

which are furniture manufacturers.

Important sources of costs of developing exporting have been investments in production technology and capacity, and travel. Lately the firm has especially aimed at improving the promptness of deliveries, since this has not been the best possible due to the full use of the production capacity in the recent years. The magnitude of the investments specifically for exporting, however, is not considered by the manager as very large in proportion to the firm's turnover. Neither has the export specificity of the investments been high, which is explained by the fact that the investments were directed to production and technology rather than to export marketing.

Firm P (Ltd) produces machine tools and machining parts (components). The enterprise was established to continue the operations of a production plant of a Swedish machine tool manufacturer in Finland in 1988. By this means the firm had an important export channel ready when operations as an independent firm began.

At the initial phase more than 90 per cent of the production ended up in Sweden. Since then exporting has spread to new destinations but its overall meaning in the firm's operations has decreased. Despite the fact that the firm has in the 1990s entered markets in Belgium (in 1991) and the United States (in 1992), the share of exports in turnover is only of the order of 70 per cent today. This decrease has

however followed at least partly from the firm's deliberate attempt to decrease its dependency on the international markets and to broaden its domestic base of customers. On the other hand, the firm's attempt to enter markets in Germany has been unsuccessful and at least partly hindered by language problems.

The most significant sources of costs for developing exporting have been traveling, hiring new staff for exporting and marketing and advertising abroad.

Because the establishment of key export channels has not required much resources, and on the other hand because of the recent emphasis on the domestic markets, the investments to develop exporting have not been large relative to the firm's scale. The risk related to these investments is also considered low by the manager of the firm.

6.2. Interpretations

Even without any numerical data on the reference Firms' K - P investment costs it seems obvious that these firms have invested substantially more in the development of exporting than the firms they are here being compared with. This conclusion is based on the managers' evaluations of the extent of export-specific investments in relation to the total operations of the firms, and to the general picture of the development of exporting in these firms. The matter is clear also in the case of Firms O (laminated wood board) and P (machining parts), that have

according to the managers' assessments invested in development of exporting only modestly. This is because in Firm I (reference point to Firm O) the investments in exporting were limited to acquiring one machine for exports of a byproduct, and Firm J's (reference point to Firm P) entry to the export markets was costless because it was based on an unsolicited order. In those firms from which the information is available, the extent to which the investments can be utilized in the domestic operations is smaller or equal to that in those firms which stopped exporting. None of the firms which exited from export markets had invested in building their own sales organizations abroad, whereas Firms L and M have used this strategy in organizing their exports.

Given that the investment behaviour described above is related to the firms' export performance, the question then is, firstly, what has been achieved by these investments and by the active development of exporting on the whole that may have contributed to the continuation of exporting uninterruptedly. Secondly, as far as the hysteresis hypothesis is concerned, it is relevant to ask whether these investments make such hysteresis plausible in these firms. Regarding the first question, I believe that the fact that the firms have spread exports to several countries, as well as the firms' overall commitment to their exporting through an established strategy, are important features. I will discuss these in turn.

The reference firms differ from the firms which stopped their exporting fairly distinctively in that they have entered one or more new export destinations soon

after or, indeed, simultaneously with the entry to the first country. Firms K, N and O entered their second export market in the same year as they started export operations. Firms M and P entered a second country in their second year of exporting and Firm L within three years from the first export deliveries. Instead, with the exception of Firm B (which was responding to unsolicited orders only) none of the firms that made an exit from export markets sold exports to more than one country at a time. From the point of view of export performance, the interpretation of these observations is straightforward: exporting to more than one country markets at the same time decreases the risk of an involuntary exit from exporting. Of course, this is nothing new since market spreading as an option in strategic planning is well known in the export marketing literature (see, e.g., Piercy 1982).

It is notable that Firms M, N, O and P initially entered export markets in the late 1980s, when the external value of Markka was high and the domestic markets booming (see Figure 2). This suggests strong competitiveness and resolution by the firms to adopt the exporting strategy. Also, Firms K and L seem not to have shifted the emphasis in their marketing to the domestic markets in the late 1980s in the same magnitude as did Firms A and B. Finally, the firms that have exported uninterruptedly have all become reasonably dependent on export markets, i.e., a large share in their turnover comes from exports. In my opinion this lends support to my earlier proposition that factors other than the exchange rate (i.e., price competitiveness alone) have been crucial determinants of success in export

markets. The comparison of firms that have and have not made an exit from export markets overall suggests that the exits have been contributed by a lack of an active export marketing strategy and a minor commitment to export marketing at the buoyant state of domestic markets. While this may not do justice to all firms that have made an exit from export markets, it seems to be rather comfortably in line with the cases presented here.

As to the second question, the hysteresis hypothesis implies in practice that for firms which incurred considerable sunk costs in exporting it may be optimal to continue exporting uninterruptedly in conditions where making an exit from the markets is the best option for firms which have not incurred such costs. In comparison to the firms which stopped exporting the uninterruptedly exporting firms have indeed incurred larger sunk costs, and have not exited the export markets. However, firstly, there is no exact information on the extent to which these costs are exit costs, and secondly, I have no data on the profitability of exporting from the reference firms. The reference firms may also have improved their efficiency in exporting (export competitiveness) more than that of the opportunistic exporters due to their deeper involvement in exporting. Thus, I still have no strong case for, or against, export hysteresis in the present data.

Finally, as to customers abroad, export channels and critical export market information in the firms' possession, it should be noted that Firms N and P have partly inherited these from their previous parent companies. Another "shortcut" to

export markets seem to have been the past work experience of a manager, as the past histories of Firms K and O show. With the exception of the re-entry to export markets by Firm I, Firms which stopped exporting do not exhibit these “inherited” characteristics. This suggests that they might be positively related to success in exports. This finding is parallel to the findings from Finnish small firms by Hurmerinta-Peltomäki (1998). She argues that the past history and experience of an entrepreneur (pre-export knowledge) influences both how and how fast the decision to export is made after the establishment of the firm. From the point of view of the export hysteresis hypothesis, the finding is relevant because in a case like this a sunk cost related to the entry to export markets is likely to be smaller than without such inherited resources. In other words, past history of a firm matters for sunk cost hysteresis.

7. Conclusions

This study has used the case-study method of research to study export market exits by small manufacturing firms based in Finland. The 10 firms studied represent all export market exits in the history of the 76 small manufacturing firms constructing the total database of the study. Due to the research methodology, however, the findings are generalizable only to theoretical propositions, not to the population of firms.

Overall, as would be expected, the vast changes in the exchange rate and domestic demand during the last decade have both induced export market entry and exit in the firms studied in this chapter. The firms studied have in general initially involved themselves in exporting in reasonably low-cost, or opportunistic, ways. Thus, they largely resemble type I exits (exit from reactive exporting) predicted in Table 1, rather than type II exits (exit from active exporting). One would expect these firms to have exited from export markets without absorbing operational losses, which is indeed largely true in this data. Put differently, the behaviour of the firms can be largely explained by the standard “Marshallian” theory, and so does not require a theory of investment that is more general than this, such as the sunk cost hysteresis theory. When the behaviour of these firms was compared to that of firms that have been exporting similar products uninterruptedly, it became clear that the reference firms had incurred larger sunk costs than firms in which the exporting was interrupted. However, unfortunately the data does not include exact information on the profitability of exports in the reference firms over the years, and no evidence on operational losses in the export markets.

The study has however generated many, to my mind, relevant insights into the export market behaviour of manufacturing small firms. As to export performance in general, price competitiveness is naturally important. However, having said this, it seems to me that factors other than the price competitiveness (i.e. the exchange rate) are likely to be crucial determinants of export success. Successful exporters, including some of the firms that have made an re-entry to exports after

a pause, seem to share some common features. Most importantly, the firms seem to have committed themselves to an explicit export strategy soon after or, even before, the (re-)initiation of exports. Secondly, they have expanded their exports to more than one country shortly after the start of their export sales. Some of the firm cases also suggest that a past experience of a firm or a manager may provide a firm a valuable shortcut to develop exporting.

From the point of view of the sunk cost hysteresis hypothesis three observations in this case study are especially worth mentioning. The first of these is that the firms that have made an exit from export markets have been generally risk averse or opportunistic in their exporting behaviour. This has meant that the exits have been in most of the cases involuntary. In these cases the *timing* of the export market exits has been determined on the demand, not supply, side. This finding lends support to the note by Richard Baldwin (Baldwin 1988) that demand side factors may be important in export hysteresis, and suggests that the role of the demand side in export hysteresis should be studied further. Secondly, developments in the domestic markets have in general had a fairly significant influence on the export market entry and exit behaviour of the reactive exporters. The message of this finding is clear: the cost of exporting should be taken as an opportunity cost. This supports the view that relative prices and costs rather than absolute prices or costs should be used in the analysis of hysteresis in exporting. Thirdly, the past history of firms, or inherited resources, may influence the sunk costs firms have to make to enter export markets. Empirical studies might benefit

from taking note of this as well.

Finally, in retrospect, it would make sense to gather more information on the learning behaviour of firms and data to define their “strategic markets” à la John Kay (1990). This is because some of the firms studied here seem to find it convenient to continue exporting with an opportunistic kind of attitude and not to sink costs in exporting. The export market behaviour of at least some smaller manufacturing firms, and especially those not producing final products, might be better explained by economic factors beyond the reach of the hysteresis hypothesis, such as Kay’s “strategic markets” approach.

Concluding Chapter: Implications for further research

In this study the exporting and differentiation behaviour of industrial small firms has been analysed on the basis of survey data collected by interviewing business managers. The research has utilized both econometric and case study methods to analyse this data. Due to the nature of the data the perspective of the study has been that of an individual firm, rather than that of industries or markets. With certain qualifications, which will be discussed below, this perspective has proved to be reasonably profitable as it has implications for both empirical and theoretical research in the export operations of small firms, product differentiation, and the hysteresis in exports.

The key findings and conclusions of the study have been summarized above in the introductory chapter and presented in detail in Chapters I-III. The purpose of this concluding chapter is to throw light on the study's lessons for further research. Small business policy is not explicitly considered because the number of observations in the analyses of the study is strictly insufficient for making generalizations to populations of firms.

In general, one can argue that survey data based on interviews and the case-study method have plenty of potential in research in industrial economics, which has been realized rather scarcely so far in the literature. It should be noted that case

studies are not intended to displace statistical analyses - actually they can do this only rarely in hypothesis testing - but they can be used to create and extend theories and specify new hypotheses. In the present study, for instance, the data has made it possible to complement statistical analyses on several occasions by in-depth analyses of the firm's behaviour. This has brought out new and important points unattainable through statistical methods. Weaknesses of the method were striven to be minimized by preventing by paying particular attention to the data collection stage of a study. For example, the business managers involved in the study were interviewed several times over a lengthy period, and the data was corroborated after each interview through checking it against the information on the firms obtained earlier and the written material obtained from the firms. This has helped to reduce response bias, inaccuracies due to poor recall and reflexivity by the respondents. The interview agendas in the in-depth interviews were largely customized, which increased the willingness of the managers to cooperate and made the interviews intensive and focused. Further, the interviews were strictly confidential which contributed to handling unfortunate episodes in the histories of the firms, such as export market exits and bankruptcies. These facts have also assumably reduced response bias caused by ex post justification. My considered view is that data collected by this method is a far more reliable and complete source of evidence than a survey database collected by posted questionnaires. Thus, although the method is not cheap, it seems to me that survey data based on interviews has been underutilised thus far in the literature.

A large part of this study has dealt with small business internationalization, the literature on which is fragmented and lacks economics-based causal theories. In Chapter I, I applied an existing theory of the diffusion of new technologies to model the export decision-making by firms. Chapter III, for its part, considered the decision to exit from exporting on the basis of a theory of (dis)investment under uncertainty. As to the application in Chapter I, the rank effects model describes, to my mind, reasonably well the presumed different phases of small firms' decisions to export. The empirical analysis based on the model's predictions also produced quite sensible results, such as the strong contribution of the language skills of the managers to the rapidity of the internationalization process. On the other hand, as regards exit from exporting, the theory based on sunk costs did not prove to be a very useful device in explaining the exit behaviour of the 10 small firms studied in the case study. In other words, the behaviour of the firms can be argued to have been largely in accordance with the standard (Marshallian) microeconomic theory.

Overall, however, what these applications of industrial economics models suggest, at the very least, is that applications of the theories in industrial economics to the internationalization process can complement the traditional learning based conceptualizations by providing new informative viewpoints on export development. The modern industrial economics that can model, for instance, situations where the decision-making takes place in several stages, or involves learning or uncertainty, is a very promising tool for developing theories of small

business internationalization. Another example of a possible application is John Kay's (1990) "Strategic Markets" approach, the

main features of which were presented in Chapter III (Section 3.2.) above. This approach, which is based on economies of scale, scope and locational comparative advantage, defines the minimum area, product or geographical, within which it is possible for a firm to compete, and beyond which firms seldom expand their operations. Thus the framework offers potentially a rationale for why some firms just do not find exporting a viable strategy whereas some other firms do.

As to empirical analyses on the internationalization of firms it is clear that the research methodology based on advanced econometric techniques should be encouraged. The strength of the use of multivariate models instead of univariate analyses is naturally that it is possible to control for the influences of several factors on the dependent variable simultaneously, as was done, for example, in the probit estimating model in Chapter I. Considering the variety of the results in the empirical literature this is a critically important, yet by no means new, point. The literature is also bifurcated with one group of studies that have sought to explain the propensity to export and another group of studies considering the intensity, or development, of exporting. Against this background, the tobit model, which is a censored regression model, seems to me a powerful and natural tool to analyse the determinants of exporting. This idea is naturally based on the fact that with a tobit model the researcher can utilize simultaneously information held by

exporting firms (data both on the regressors as well as the regressand, e.g., the share of exports in turnover) and home-market firms (data only on the regressors), to explain the intensity of exporting. Given the availability of suitable data-sets, which should not be a major problem, this method is not only more efficient than either one of the traditional approaches by themselves, but could also help to bring the two branches of research closer together. However, in the present study, the tobit model was not utilized since it is not appropriate for the empirical analysis of the specific application of the innovation diffusion theory to exporting presented in Chapter I or the export market exit studied in Chapter III.

In the area of research in product differentiation and the basis for competitiveness of firms more generally (the subject matter of Chapter II), research rooted in the perspective of the individual enterprise seems relatively underdeveloped. In particular, approaches that endeavour to link price competitiveness and differentiation, and those considering ability to sustain competitive advantages, seem to have received unduly scant attention in the industrial economics literature in the light of the vast significance of these issues in the real world. In this research I have taken advantage of the new horizons in analysis opened by a perspective taking an individual firm's viewpoint, that are difficult to accomplish on the basis of theoretical models considering the behaviour of a group of firms. In particular, from the individual firm's viewpoint it was possible to observe and analyse situations where a firm had several strategic options available at the same time. Case studies do provide a rich source of information on the foundations and

creation of competitiveness, whether they be led by costs or differentiation, since with the help of them one can clarify causal relations between different variables at the crucial level - in the decision-making processes of firms.

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Appendix 1: Questionnaire 1996⁶¹

Timo Lautanen
Department of economics
University of Warwick
U.K.

INTERNATIONALIZATION AND COMPETITION IN SMALLER FIRMS

Structured/semi-structured interviews 1996

Implementation of the interviews

All the 80 entrepreneurs interviewed in 1992 will be contacted and interviewed, even if the firm is known to have gone bankrupt or quitted. The entrepreneurs will be contacted first by telephone to see if and when it would be convenient for us to interview them. After this a letter including information on the study and some of the questions (those which require numerical information, such as number of employees, share of exports in turnover and the proportion of subcontracts in turnover) will be sent to make sure that all the required pieces of information will be available without inconvenience at the actual interview. In all occasions, the utmost confidentiality and the academic nature of the study will be emphasized.

In the following agenda introductions to questions and other notes are separated by square brackets. In the interviews, the respondents will get in front of them a folder containing the questions only to make answering easier.

⁶¹The questionnaire is based to a large degree on the Finnish questionnaire used in the Nordic comparative research project "Smaforetagens internationalisering - en studie av anpassningsprocesser till EG'92 och regional utveckling" in 1992 (see Lindmark et al. 1994). In addition, some questions have been adopted from the questionnaires and interview agendas in Reid (1993) and Piercy (1982).

CONFIDENTIAL
Interview agenda 1996

Name of the interviewer:

Date of the interview:

Firm code:

Time interview started:

[Firm: 1 no changes

2 Re-established (independent)

3 Re-established (not independent)]

[Interviewee:

1 Interviewee is the owner-manager (same person as in 1992)

2 Interviewee is the owner-manager (different person than in 1992)

3 Interviewee not the owner-manager (same person as in 1992)

4 Interviewee not the owner-manager (different than in 1992)]

[Pre-ample: Thank you for agreeing to this interview. As I told you over the phone this is a follow-up study of the research project of the Academy of Finland implemented in 1992-94 (A Nordic comparative study on the internationalization of small businesses). Before going to the questions themselves, I would like to emphasize some of the principles of this study: 1) Confidentiality and academic nature (firms or persons will be presented anonymously in any reports published, and nobody else than the research group members will have access to the original information material; the questions are also rather general and do not involve any real business secrets), 2) We hope that through the information we compile in this study we can influence the decision-makers of the small business policy in Finland and other Nordic countries (refer to our first report published by the Ministry of the Interior in 1994, and the final report by the NordREFO in 1994). Also, the interviews have often given the interviewees themselves new ideas to develop their firm more competitive. All the interviewed persons will also obtain the final report of the study in which the key findings will be summarized. If you have any questions about the study, please feel free to ask me any time. You can also contact me later - you have my contact information in the letter you received earlier.

In practice, what I would like to do today is to update some of that information we already have on the basis of the first interview in 1992, and go through a number new questions related to possible exporting and competitive conditions of your firm. Some of the questions are not relevant for all the firms, so part of the questions can always be skipped. Some of the questions are also more and some less structured. Even if you are not the person interviewed in this firm in 1992, you still can answer the questions and by so doing help a lot. I have here an agenda (folder) for you which should help you to answer the questions]

Questions:**CONFIDENTIAL**

[Questions marked with an asterisk are included in material sent in beforehand]

1. Background:

1.1.1. Name and address of the enterprise:

1.1.2. Interviewee and position in the firm:

1.2. Branch (ISIC-3):

[To start with, I need to know what changes, in terms of organization, personnel, products and size, has taken place in the your company since 1992 when we interviewed you last time.]

1.3. Could you tell us whether the firm's organization has changed in the following respects since 1992?

Ownership:

Managership:

Location:

Mergers or acquisitions:

1.4. Any other changes in the organization of the firm since 1992?

*1.5. Number of employees in 1994 and in the end of 1995 (two part-time equal one full-time)

	1994	1995
white collar staff		
blue collar staff		
in total		

*1.6. Basic education of the white collar staff today. How many of the present white collar staff has the following educational background:

- university degree _____
- technical (or other) college _____
- without further education _____

*1.7. How many of the white collar staff is fluent in the following languages?

- English _____
- Swedish _____
- German _____
- Other language, what _____

1.8. Has the competence level of the total staff changed since 1992?

clearly deteriorated	deteriorated	at the same level	improved	clearly improved
1	2	3	4	5

*1.9. Turnover in 1994 and 1995, million (FIM), excl. VAT

	1994	1995
Turnover, million (FIM), excl. VAT		

*1.10. Regional division of sales, 1995

	1995, per cent of the turnover
local (labour mar- ket district)	
the rest of Finland	
foreign countries	
	100 %

1.11. What was the net result of the firm in 1995? Use the following scale (net result per the turnover, excl. VAT):

clearly in the red ($> -5\%$)	in the red ($-5 - -1\%$)	null result	in the black ($1 - 5\%$)	clearly in the black ($>5\%$)
1	2	3	4	5

1.12. How has the profitability of the firm developed over the last three years (1992 - 1995)?

continuously improved	continuously deteriorated	no change	varying
1	2	3	4

*1.13. What was the (approximate) share of own capital in the total capital of the firm in 1985, 1990 and 1995?

year	share of own capital in the total capital of the firm
1985	
1990	
1995	

[Good. Next we have questions which concern the management and especially you yourself]

Manager

2.1. Is this firm run by a new managing director compared to the situation in 1992?

1 yes *[questions 2.2.- 2.5.]* 2 no *[go to 2.6.]*

If yes, what is your [or the new manager's if the interviewee not the manager]:

2.2. Basic education?

- 1 max high school (secondary school; 12 years of education)
- 2 2-3 years technical degree
- 3 2-3 years commercial degree
- 4 4- years technical degree
- 5 4- years commercial degree

2.3. Do you have a fairly good knowledge of the following languages (can you do business in these languages?):

	spoken	both spoken and written	neither
-English	1	2	3
-German	1	2	3
-Swedish	1	2	3
-French	1	2	3
-other what	1	2	3

2.4. Do you have following work experience (for six months at least):

	yes	no
-large enterprises (> 200 employees)	1	2
-foreign enterprises	1	2
-other branches	1	2
-consultancies	1	2

2.5. Have you born in this region and do you have any other family relations in here?

yes	no
1	2

[Questions 2.6.-2.11. to all the interviewees]

2.6. Were you internally recruited? (i.e., were you working for this firm before you became the manager)?

- 1 yes
- 2 no (recruited outside this firm)
- 3 I am the establisher of the firm

2.7. For how many years have you been working in this enterprise?

_____ years

2.8. How old are you?

_____ years

2.9. In which work tasks have your work-related skills and knowledge developed most since 1992?

2.10. To what extent do you have work-related personal contacts with other entrepreneurs in this region? What is the purpose of these contacts? How important these contacts are from the point of view of developing the enterprise?

2.11. Describe in short those personal contacts of yours which give you access to important information to develop the enterprise. Who are the partners (customers, subcontractors, shareholders etc.) and where are they located? What kind of information do you obtain from them? How important is this information for the enterprise?

2.12. Which of the following are the three most important elements in managing the firm:

- 1 cost efficient production
- 2 "Just on time" in production and delivery
- 3 high quality of the products
- 4 product development
- 5 customizing of products
- 6 profit maximization
- 7 defending market share
- 8 growth
- 9 internationalization
- 10 other (what?)

1. _____, 2. _____, 3. _____

[Very good, next we will deal with products and production]

3. Products and production technology

*3.1. What are the main products of the firm and what was the share of each of these in the total turnover of the firm in 1995?

	product group	approximate share of the total turnover in 1995, %	ISIC-4
product 1			
product 2			
product 3			

3.2. To what extent has your firm introduced new products in the markets since 1992?

	not at all			markedly	
- completely new products	1	2	3	4	5
- new models better by quality	1	2	3	4	5
- new models developed by other characteristics than product quality	1	2	3	4	5

*3.3. How large is the share of your own products in the total turnover of your firm?

_____ %

3.4. What is the meaning of the following issues for the competitiveness of your main product?

	not important				very important
a) price	1	2	3	4	5
b) reliability of delivery	1	2	3	4	5
c) technical level	1	2	3	4	5
d) quality	1	2	3	4	5
e) design	1	2	3	4	5
f) customization	1	2	3	4	5

3.5. How has the production process of your firm changed since 1992:

much more labour intensive 1	more labour intensive 2	no change 3	more capital intensive 4	much more capital intensive 5
---------------------------------------	----------------------------------	----------------	-----------------------------------	--

3.6. To what extent has your firm adopted new production technology since 1992?

	not at all				to a marked extent
- completely new technology in the industry	1	2	3	4	5
- new technology for this firm	1	2	3	4	5
- improved existing technology	1	2	3	4	5

3.7. In general, to what extent has this firm adopted the following technologies:

	not at all				to a marked extent
Construction:					
- data assisted construction (DAC)	1	2	3	4	5
Production:					
- numerically controlled machine tools (CNC, NC)	1	2	3	4	5
- robots or manipulators	1	2	3	4	5
Production control (steering):					
- DAC/DAP systems	1	2	3	4	5
- material production control (MPC)	1	2	3	4	5
- logistic control	1	2	3	4	5
Quality control:					
- random tests	1	2	3	4	5
- quality system	1	2	3	4	5
- certification of staff	1	2	3	4	5

Management IT systems					
- accounting and budget control systems	1	2	3	4	5
- data network to customers or subcontractors	1	2	3	4	5
- financial information and money transactions connections	1	2	3	4	5

3.8. In general, to what extent has your firm automated production with the use of data assisted production systems (equipment or technology)?

not at all or very little			significantly		
1	2	3	4	5	

3.9. How important are the following issues currently in development of your firm (R&D)?

	not important			very important	
a) development of own process technology	1	2	3	4	5
b) adoption of new process technologies	1	2	3	4	5
c) development of new products	1	2	3	4	5
d) improvement of existing products	1	2	3	4	5

4. Subcontracting relations

[In this Section our aim is clarify both upstream and downstream subcontracting relations of your firm by dividing these into local (inside this labour market district) and non-local ones.]

*4.1. Does your firm use subcontractors?

yes	no
1	2

If yes,

How large was roughly the proportion of subcontracts a) from this region
b) from elsewhere of the total turnover of your firm in 1995?

a) local region, about	%
b) elsewhere, about	%

*4.2. Does your firm operate as a subcontractor for other firms?

yes	no
1	2

If yes,

Approximately what was the proportion of these contractions a) for firms
in this region b) for firms elsewhere, of the total turnover of your firm in
1995?

a) local region, about	%
b) elsewhere, about	%

*[Good, next we deal with the cooperative relations of your firm to other firms,
people or institutions in more general]*

5. Cooperative relations

5.1. How many active cooperative networks is your firm currently involved
in?

5.2. I would like to ask you to think of the most important of these cooperative networks. How many partners are there in this network and where is the most important partner located?

Number of partners: _____	Location of the most important partner:			
	local labour market district	capital region	elsewhere in Finland	abroad
	1	2	3	4

5.3. Which ones of the following business services has your firm used during the last three years?

	not used	from this labour market district	elsewhere	from both
a) information technology services, consultancy	0	1	2	3
b) auditing and accountancy	0	1	2	3
c) management consultancy	0	1	2	3
d) advertising and marketing	0	1	2	3
e) transportation, forwarding	0	1	2	3
f) export consultancy	0	1	2	3
g) technical expertise	0	1	2	3
h) juridical consultancy	0	1	2	3
i) personnel training	0	1	2	3
j) private financial services	0	1	2	3
k) public enterprise services	0	1	2	3
l) other, what?	0	1	2	3
	0	1	2	3

[Very good, the next set of questions deals with the possible exporting activities of your firm. The first thing to find out is whether your firm ever has had export deliveries]

6. Exporting

*6.1. Did your firm have export deliveries in 1995, or earlier?

1 yes (1995), without a pause from the start of the exporting in _____

2 yes (1995), started initially in _____ but there was a pause in exporting from _____ till _____

3 not in 1995, but we have started this year (1996)

4 not in 1995, but we had earlier, from _____ till _____

_____ *[questions 6.3., 6.6. and 6.7. and then go to Section 7]*

5 no, never *[go to question 8.13. and then to Section 11]*

6.2. Is this exporting established (regular) in the sense that you have established your position in markets of least one foreign country?

1 yes

2 no

*6.3. What was the share of exports of the total turnover of your firm in 1992-1995? What do you reckon it will be in 1997?

year	exports, per cent of the total turn-over
1992	
1993	
1994	
1995	
1997	

*6.4. In total, how many countries did you export to in 1995? _____

*6.5. What were the five most important export countries and their approximate shares of the total exports in 1995?

	exports to this country/total exports, 1995, %
1 country:	
2 country:	
3 country:	
4 country:	
5 country:	

*6.6. What is the main product exported?

(SIC-4: _____)

6.7. How would you summarize your firm's expectations from exporting? Where do you think your firm will be located on the following scale in the future, say, in 5 years:

1	2	3	4	5
Exports will be just a supplement to home-markets, or based unsolicited orders mainly	Exports will be substantial but not as important as home-market	Exports will be equal in importance to home-market	Export will be slightly more important than home-market	Exports will be the main source of business

7. The first export delivery

[As we know, firms start and develop their exporting activities in very different ways and paces. In this section, I will ask questions about the very first export deliveries of your firm and about the stimuli for exporting. In the section after this the possible later export activity will be clarified.]

7.1. How did you come to think of the possibility of exporting? What was the most important stimulus?

- 1 got an unsolicited order from abroad
- 2 observed other firms exporting the similar products
- 3 own import operations
- 4 the idea came from another domestic enterprise
- 5 the idea came through a personal contact
- 6 the idea came from a bank or a middleman
- 7 the idea came from public export stimulation programme
- 8 excess capacity
- 9 domestic recession
- 10 intensified local or domestic competition
- 11 growth objective of the firm
- 12 taking advantage on potential economies of scale
- 13 other stimulus, what?

If there were several stimuli, what were the second and third important ones?

1. _____, 2. _____, 3. _____

7.2. When did you get this stimulus for exporting? How long before the very first export delivery?

year: _____

_____ (years,
months) before the first
delivery

7.3. Tell me more about the first export delivery:

- time?
- country?
- product?
- channel?

8. Exporting after the first delivery

*8.1. If you have had export deliveries to more than one country, could you please name these countries (up to 5 first) in the order of starting exports? (You may not export to these countries any more).

country	exporting started (year)
1. (from 7.3.):	
2.	
3.	
4.	
5.	

8.2. How well do the following characterizations describe the change in your exporting activities from the beginning?

- We still export our products directly to end-users abroad	not at all				very well
	1	2	3	4	5
- We still use wholesalers, agents or partners abroad to organize exporting	1	2	3	4	5
- We have invested in sales or production subsidiaries abroad	1	2	3	4	5
- We nowadays use different export strategies in different export markets	1	2	3	4	5

*8.3. Next we need to define **the moment when the proportion of exports of the total turnover reached for the first time 10 per cent to stay at this level for at least two consecutive years?** Lets call this moment (year) "**establishment**" of exporting.

*8.3.1. Has the share of exports of the total turnover in your firm ever been 10 % or more?
1 yes, when for the first time? _____ 2 no

*8.3.2. *If yes*, was it at that level in the following year also?

- 1 yes, the year of establishment of exporting according to this definition is thus _____ [the latter year]
2 no

*8.3.3. *If no*, has the proportion of exports of the total turnover ever reached 10 per cent to stay at this level for at least two consecutive years? 1 yes 2 no

If yes, when?

- the year of establishment of exporting thus _____ [the second year]

*8.4. How many workers did you approximately have at the time of the export "establishment"? _____

*8.5. How many countries did you export at that time to? _____

*8.6. Do you think that your firm was at that time (*when exporting was "established"*, ie. in _____) among other domestic producers of your main export product:

- 1 small
- 2 smallish
- 3 middle-size
- 4 fairly large
- 5 large

*8.7. What do you reckon, were you one of the first or last to "establish" exporting among the other domestic producers of your main export product?

- 1 we were the very first to "establish" exporting (to export more than 10 % of the turnover)
- 2 we were among the first, not the very first one
- 3 about half of the firms may have "established" exporters already
- 4 clearly, more than half of the firms were "established" exporters already
- 5 almost all the other firms in the industry were "established" exporters

[8.8.- 8.17. more generally on the development of exporting]

8.8. How well do the following characterizations describe the development of your exporting activities?

a) We learned from your own experiments and mistakes in exporting especially in the beginning	not at all 1	2	3	4	very well 5
b) We were surprised to find certain things about the exported product(s) or the production process after we started exporting	1	2	3	4	5
c) We acquired new workers or white collar staff for exporting activities	1	2	3	4	5
d) We used external market research to acquire foreign market information	1	2	3	4	5
e) We found public export assistance or information services very helpful in developing our export activity	1	2	3	4	5
f) People or firms we have been in contact to through export business have helped us with product design, process development and otherwise to improve our export performance	1	2	3	4	5
g) We strived to develop exporting because we expected it to be clearly profitable	1	2	3	4	5
i) We needed "experimental" knowledge (knowledge gainable only through own operations and experiences in exporting) to develop exporting	1	2	3	4	5

8.9. Does your firm have other foreign market activities apart from direct exporting of goods, such as:

	yes	no
- indirect exporting (through a local agent)	1	2
- exporting of services or know-how	1	2

- licensing, franchising, contract manufacturing, international subcontracting	1	2
- importing	1	2
- production, assembly, sales (promotion) subsidiaries, warehousing units or service units overseas?	1	2
- other, what? _____	1	2

8.10. What type of resources or information you mainly acquired from other firms, public institutions and by buying from markets to develop exporting?

8.11. Do the following issues form thresholds for your firm's exporting today?

Production:	yes	no
a) insufficient production capacity	1	2
b) shortages in production process	1	2
c) lack of competent personnel	1	2
d) differing standards (DIN, ISO etc.)	1	2
e) differing safety or quality regulations	1	2
f) difficulties with speed of deliveries	1	2
g) uneven product quality	1	2
h) difficulties in meeting the "just on time" principle of customers	1	2
i) other, please specify:		
Marketing:		
a) difficulties in technical testing of products	1	2
b) credit rating of customers	1	2
c) lack of experience in foreign currencies	1	2
d) difficulties in finding the right distribution channels	1	2
e) difficulties in finding customers	1	2
f) difficulties in finding decision-makers and relations to them	1	2
g) difficulties in finding situations for displaying and marketing of products	1	2
h) juridical and other problems with contracts	1	2
i) language problems	1	2
j) other, please specify:		

8.12. Which of the following form the most important obstacles to exports to the (other) European Union countries?

- 1 languages
- 2 cultural differences
- 3 lack of competence in exporting in general
- 4 limited resources
- 5 high domestic cost and price level
- 6 home country image
- 7 currency risks
- 8 physical barriers to trade (e.g., duty regulations and passage through
- 9 technical barriers to trade (e.g., legislation and standards)
- 10 fiscal barriers, VAT
- 11 other, please specify

1. _____, 2. _____, 3. _____

[Skip 8.13. if the firm is an exporting firm]

8.13.1. If your firm has no exporting, please indicate the most important reasons for this:

	not important			very important	
a) difficulties in financing the exporting	1	2	3	4	5
b) scarce staff resources	1	2	3	4	5
c) high domestic level of costs and prices	1	2	3	4	5
d) high transportation costs	1	2	3	4	5
e) sufficient demand in the domestic markets	1	2	3	4	5
f) lack of suitable products	1	2	3	4	5
g) language difficulties	1	2	3	4	5
h) cultural differences	1	2	3	4	5
i) distance from the markets	1	2	3	4	5
j) other, please specify	1	2	3	4	5

8.13.2. Are you planning to try or start exporting in the near future?

1 yes 2 no

*8.14. Have you discussed with government officials (in export programmes) on the problems you have faced in your export operations, or got financial support for developing exporting? How have you benefited from these?

*8.15. How these programmes could be improved?

[Good. Then we have a few questions that are related to the costs of exporting]

9. Costs of exporting

[For firms with export experience. By initial costs of exporting here is meant here outlays which a firm is involving in to develop exporting. Such costs rise, for example, from acquiring resources and knowledge for the export business].

9.1. What **type** of initial costs did your firm involve in to establish its exporting?

	not important			very important	
	1	2	3	4	5
a) employment of new staff devoted to exports					
b) investments to technology or capacity of production	1	2	3	4	5
c) product development	1	2	3	4	5
d) market research	1	2	3	4	5
e) export market promotion based at home country (promotion and advertising abroad)	1	2	3	4	5
f) direct investments abroad in production, sales or promotion offices or subsidiaries	1	2	3	4	5
g) travelling	1	2	3	4	5
h) other, please specify	1	2	3	4	5

9.2. How would you assess the overall importance and riskiness of these investments?

they were not large			they were substantial		
1	2	3	4	5	

they have beared
no risk

they have involved
quite risky

1 2 3 4 5

9.3. Could your firm have benefited from these investments in the domestic markets if you had not continued exporting?

no, the investment could
not have been utilized
in the domestic business

the investments could have
been fully utilized in the
domestic business

1 2 3 4 5

[Excellent. Now we have only a few sections left. If the firm is not one of those withdrawn temporarily or for good from exporting, go to section 11: "Competitive situation"]

10. Withdrawing from exporting

[There are a variety of reasons why firms may quit exporting, temporarily or permanently. Next we would like to ask more about the specific conditions where your firm stopped exporting; I learned [from 6.1.] that you quitted or paused exporting in _____]

10.1. Which one of the following is closest to your firm's exporting activity before the withdrawal from exporting:

- 1 we were responding to unsolicited orders from abroad, but were not really interested in committing itself in exporting,
- 2 we were actively exploring possibilities for regular exporting, but found that it was not profitable or feasible for other reason
- 3 we were already exporting regularly to a country, or to several countries

10.2. To what extent did the following issues influence your firm's withdrawal from exporting?

	not important			very important	
a) difficulties in finding right export channels	1	2	3	4	5
b) increased demand in the domestic markets	1	2	3	4	5
c) difficulties in financing the export	1	2	3	4	5
d) difficulties in adapting the product for the export markets (design, packaging, legal/technical specifications etc.)	1	2	3	4	5
e) concentration of exports to an old declining product	1	2	3	4	5
f) high domestic level of costs or prices	1	2	3	4	5
g) language or cultural barriers	1	2	3	4	5
h) loss of a key person	1	2	3	4	5
i) legal/technical regulations (tariffs, quotas, non-tariff barriers, red tape etc.)	1	2	3	4	5
j) less intense competition in the domestic markets	1	2	3	4	5
k) increase in competition in the export markets or otherwise competitors' actions	1	2	3	4	5
l) high risks related to export marketing	1	2	3	4	5
m) difficulties in finding customers abroad	1	2	3	4	5
n) high transportation costs	1	2	3	4	5
o) political instability in the export market	1	2	3	4	5
p) economical instability in the export market	1	2	3	4	5
q) other, please specify	1	2	3	4	5

10.3. Could you tell me more about the withdrawing and the reasons for it? *[For example, if the competitors did matter, what were the competitors' actions]*

10.4. How large was the proportion of exports of the total turnover of the firm at its largest before the withdrawal?

approximately %

10.5.1. In case the exchange rate had been 20 per cent higher (i.e., Finland's Markka would have been devaluated by 20 %) in the time of the withdrawal, would you have stayed in the exporting markets or withdrawn from exporting?

- 1 we would have stopped anyway
- 2 we would have continued exporting

10.5.2. How about the situation with a 10 per cent devaluation?

- 1 we would have stopped anyway
- 2 we would have continued exporting

10.6. Did you suffer financial losses from exporting? If yes, how substantial were these?

Not					Substantial
Substantial					
	1	2	3	4	5

10.7. What was the cause for these losses?

10.8. If the withdrawing was preceded by a period at a loss, how long was this period? *[If export orders occasional in nature, ask the number of deliveries over the experimenting period, and how long was this period?]*

- 1 not at all (exporting was profitable till the end)
- 2 from 1 to 3 months
- 3 from 4 to 6 months
- 4 from 7 to 12 months
- 5 more than a year

[Very good. Now we have only a couple of sections left (only about 20 question); important and interesting set of questions: they concern competition. If needed, emphasize the full confidentiality of this research, and the fact that the interviewee could be of an irreplaceable help by answering these questions]

11. Competitive situation

11.1.1. Can you distinguish between main and minor competitors for your main product?

yes	no
1	2

If yes,

- how many main competitors do you have? _____
- how many minor competitors do you have? _____

If no,

- how many competitors do you have in total? _____

11.1.2. Is your main competitor:

1 a domestic firm	2 a foreign firm
-------------------	------------------

11.1.3. Do you meet your hardest competitor:

- 1 in the export markets
- 2 in the domestic markets
- 3 both in the exporting and domestic markets

11.1.4. Is your main competitor smaller or larger than your firm?

- 1 smaller
- 2 about the same size
- 3 larger

11.2. How many producers of the main product are there in the local and in the country in total in addition to you?

- in the local area (labour market district) _____
- in Finland _____

11.3. Approximately what is your share of the markets for the main product in Finland, and what is this piece of information based on?

- | | |
|---------|--|
| _____ % | 1 personal estimate or analysis by this firm |
| | 2 market research for this firm |
| | 3 industry organization, magazine etc. |
| | 4 other, what? |

11.4. How would you describe the change in competition during the last three years (since 1992) in the markets for the main product?

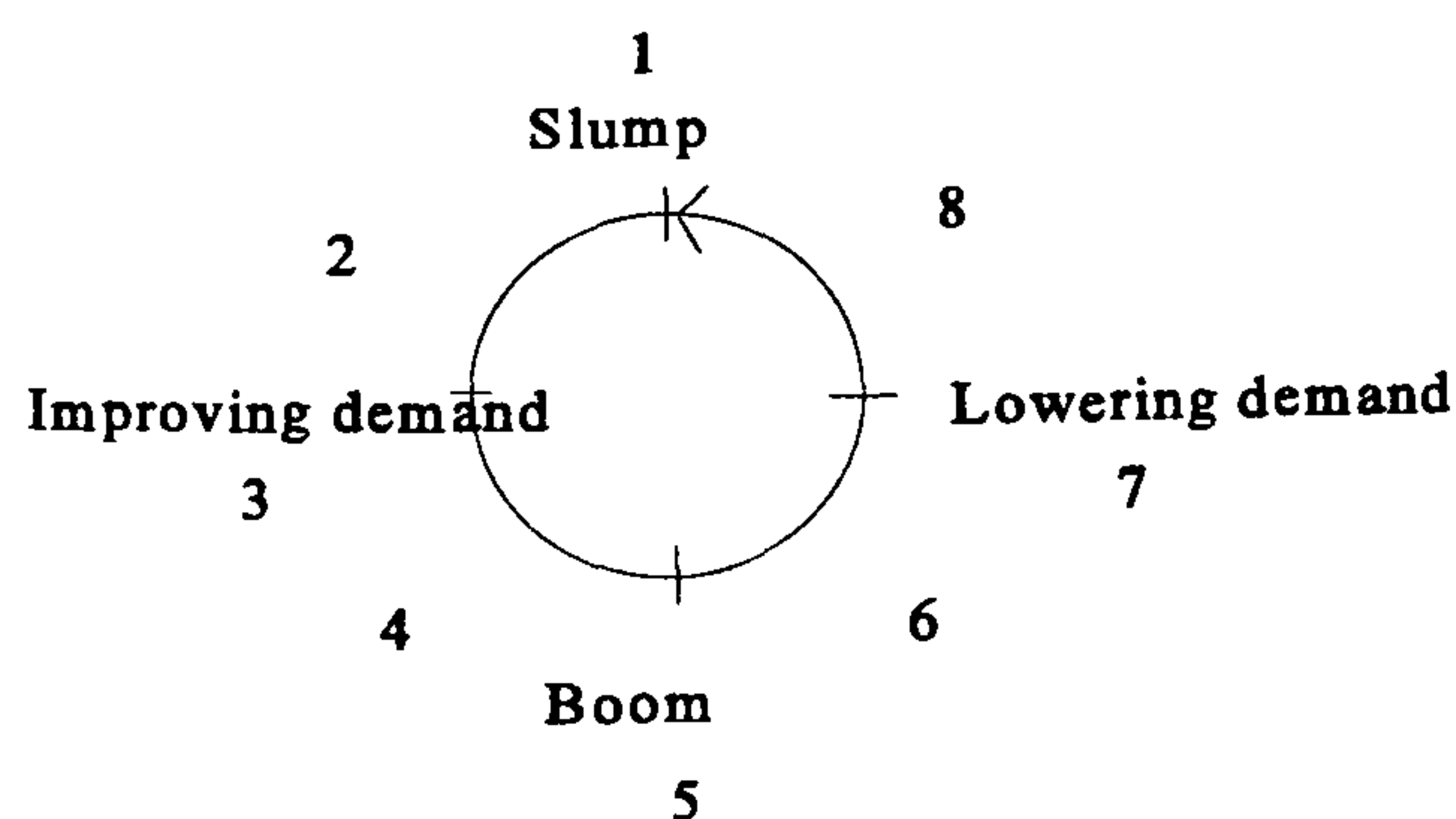
- 1 competition has increased substantially
- 2 competition has increased
- 3 no change
- 4 competition has rather decreased
- 5 competition has clearly decreased

11.5. What has caused the possible change in competition? Name the three most important reasons?

- 1 introduction of new products
- 2 decrease in demand
- 3 competition from the low-cost countries
- 4 exchange rate changes
- 5 introduction of new production technology
- 6 exclusion of barriers to trade
- 7 new domestic competitors
- 8 new foreign competitors
- 9 fewer domestic competitors (production in Finland)
- 10 fewer foreign competitors (production abroad)
- 11 restructuring of the industry through mergers or acquisitions
- 12 other, please specify

1 _____, 2. _____, 3. _____

11.6. How would you describe the current business conditions in the markets for your main product using the numbers of the below figure:



11.7. If all your main competitors CUT their prices, say, by 5 %, and you did not change your price, how do you reckon it would affect your sales of the main product? The sales would most likely:

- 1 fall more than 5%
- 2 fall by approximately 5%
- 3 fall, but less than 5%
- 4 not fall at all

11.8. If your main competitors INCREASED their prices by 5 %, and you did not change your price, how do you reckon it would affect your sales of the main product? The sales would most likely:

- 1 increase more than 5%
- 2 increase by approximately 5%
- 3 increase, but less than 5%
- 4 not increase at all

11.9. Do you reckon you would reduce your price if your main competitors really CUT their price by 5 % ?

- 1 no
- 2 yes, but less than 5 %
- 3 yes, by 5 %
- 4 yes, more than 5 %

11.10. Would you raise your price if your main competitors RAISED their prices by 5 % ?

- 1 no
- 2 yes, but less than 5 %
- 3 yes, by 5 %
- 4 yes, more than 5 %

11.11. Did the EEA and/or EU membership change the operating environment of this firm?

	no		yes		
			significantly		
a) through increasing competition in export	1	2	3	4	5
b) by providing new exporting possibilities	1	2	3	4	5
c) through increasing foreign competition in the domestic markets	1	2	3	4	5

- | | | | | | |
|--|---|---|---|---|---|
| d) through emphasizing product adaptation | 1 | 2 | 3 | 4 | 5 |
| e) through changes in subcontracting systems | 1 | 2 | 3 | 4 | 5 |
| f) other, please specify | 1 | 2 | 3 | 4 | 5 |

11.12. Have the EEA/EU memberships implied increasing import competition in the domestic markets for your main product?

- 1 no
- 2 in a smaller degree
- 3 significantly

11.13. Have the EEA/EU memberships lead to foreign direct investments into Finland into production of the main product of this firm?

- 1 no
- 2 yes: increase in new subsidiaries or establishments in Finland
- 3 yes: increase in number of takeovers or mergers of Finnish firms
- 4 yes: increase in smaller investments in Finnish firms

12. Competitive forces and firms' planning attitudes

[This is the last set of questions].

INDUSTRY (the markets for your main product):

12.1. Is it important or general that competitors differentiate their products from each other in the markets for the main product?

- | | | | | | |
|-----------|---|---|---|---|-----------|
| not | | | | | very |
| important | | | | | important |
| 1 | 2 | 3 | 4 | 5 | |

12.2. Are there potential economies of scale in the production of the main product?

- | | | | | |
|----|---|---|---|--------|
| no | | | | yes |
| 1 | 2 | 3 | 4 | marked |
| 1 | 2 | 3 | 4 | 5 |

12.3. Sometimes there are advantages called "economies of scope" possible to achieve from producing or delivering different objects (products, services etc.) together rather than separately (by different firms). Do you consider that there are "economies of scope" related to your main

product, i.e., is it/would it be advantageous to produce or deliver some products or services together with your main product?

a) economies of scope in production	no 1	2	3	4	yes marked 5
b) economies of scope in delivery or marketing	1	2	3	4	5

12.4. What is the meaning of the following factors as barriers to market entry in the markets for your main product?

a) economies of scale (larger firms have cost advantages and can thus sell cheaper deterring by so means entry)	not important					important				
	1	2	3	4	5					
b) differentiation of products (customer loyalty or diversification to fill the product space)	1	2	3	4	5					
c) substantial capital requirements (to start operations)	1	2	3	4	5					
d) (sunk) shifting costs (market exit costly which makes this a market entry barrier)	1	2	3	4	5					
e) limited access to distribution channels	1	2	3	4	5					
f) threat of a punishment/retaliation by competitors (explicit or tacit)	1	2	3	4	5					
g) dumping (price kept low as necessary to make potential entrants unable to cover their costs)	1	2	3	4	5					
h) legal/technical impediments to market entry	1	2	3	4	5					
i) other obstacle, what?	1	2	3	4	5					

Planning attitude of this firm

12.5. Do you aim at differentiating your main product from the competing products?

no					yes
					strongly
1	2	3	4	5	

12.6. By what means you do this? [*physical features of the product, post-selling services, advertising, ...?*]

12.7. How important are the following aims in the operations of your firm in the markets for the main product:

					not				important
a) we challenge potential new competitors when they enter the markets by our good competitiveness	1	2	3	4	5				
b) we defend our position in the markets by influencing the possibilities for new market entry	1	2	3	4	5				

12.8. Do you reckon you have so-called absolute cost advantages (e.g., special know-how related to the product or production which is difficult to imitate; limited access to inputs; out advantageous location; public support)

1 yes, what 2 no

12.9. Have the recent integration developments (the EEA/membership in the EU) or changes followed these in the operating environment had an influence on the planning attitude in your firm?

no					yes
					markedly
1	2	3	4	5	

*12.10. Which government measures would best benefit this firm?

THANK YOU EVER SO MUCH.

[Take the folder. Remind about the possibility to contact any time.]

Time interview completed:

Appendix 2: Questionnaire 1997:1

(An example of a customized interview agenda on product differentiation):

Timo Lautanen
Ph.D. Programme
Department of Economics
University of Warwick
Coventry, U.K.

PRODUCT DIFFERENTIATION IN SMALL MANUFACTURING FIRMS: SEMI-STRUCTURED INTERVIEWS 1997

- Brief the meaning of this particular part of the study & exchange the latest news
- This interview: mostly free-form questions in addition to that numerical information asked by fax in beforehand.

1. The firm and the manager; time, date & place of the interview

FAX number of the firm:

2. Turnover, number of employees, main products & shares of subcontracting and the transmission components of the turnover in 1996 (and for as many years during the last ten years as possible; financial performance over the last ten years (net profit/turnover); cf. the fax sent in beforehand)

3. Product strategy and differentiation etc.

- How do you define the markets where the firm operates in?
- The product strategy of the firm? Changes in this and when?
- One can argue that only rarely diversification as a response to increased competition is beneficial. Why did you choose diversification? What level of expertise did you have on specialized subcontracting when you decided to change the product strategy?
- How in practice the product (components) has been changed over the

years? Why? What do you mean by supplementary services discussed last year? Do these relate both to components and subcontracting?

- How do you define quality of components?
- Do you advertise to promote your product over those of rivals or to increase demand for components/special subcontracting in general? When did this start?
- What type of information do you use as background information in differentiation? (Customer feedback, own R&D, market research...)
- What are the main challenges for the product strategy over the next few years? [to conclude where the firm may have failed in the past in this respect]
- In the markets for a) components b) specialized subcontracting is the dominant form of competition by price, quality, sales, market share, advertising or some other (what) form?
- Pricing policy? Describe changes in this over the years?
- How many competitors do you have in the markets for components? Has this number changed over the last few years? Are there any other differences in the products (transmission components) between the most important competitors (cheap imports) than quality and price?
- Do customers care about quality of components? Is it impossible to produce low quality with lower costs? [Why do you stick to high quality and high price? An example is provided by M. Porter: high quality management can be efficient and an excellent competitive advantage in relation to normal low-quality producers; how do you see the Chinese producers of transmission components in this respect?]
- Why not trying to lower labour costs by shifting production to Russia or Estonia only at a stone's throw away? What kind of difference would this make?
- What was the reason for the bankruptcy? (Competitors reactions? Decrease in demand due to the slump? Did you have foreign debt?)
- What factors have influenced the profitability over the last ten years?
- Agglomeration economies: a) Locational advantages from clustering, infrastructure (no?), b) standardization (yes?), c) Informational externalities

ties, following competitors design (?), d) reduction in customer search costs (no?)

- Would relocation in the product space, i.e., changing the product's characteristics be costly? Give examples of costs of developing or changing the product?
- Have your competitors changed their products or production processes as you have changed yours?
- Why did the meaning of export clearly decrease in the late 1980s?
- Any changes in technical regulations concerning components due to the integration agreements between Finland and the EU/EEC? New competitors?

Ask for an annual report, brochures, and permission to publish an anonymous case study report based on the interviews and other material.

Appendix 3: Questionnaire 1997:2

Timo Lautanen
Ph.D. Programme
Department of Economics
University of Warwick
Coventry, U.K.

EXPORT MARKET EXIT: SEMI-STRUCTURED INTERVIEWS 1997

- Brief the meaning of this particular part of the study & exchange the latest news
- This interview: 7 sections; questions asked as applicable, emphasis on sections 4-6 (exiting and reentering export markets)

0. The firm and the manager; time, date & place of the interview

FAX number of the firm:

1. Basic information on the firms in 1996 (as in the previous interviews; asked in beforehand by fax; check these in the interview situation):

- The main products:
- Number of employees:
- Turnover, billion FIM:
- Net result % of turnover:
- Share of exports of turnover:
- Total number & names of 5 most important exporting countries (if exporting):

2. Marketing & competition (current situation; in case the firm has not exports currently, ask about the situation at the time the firm had exports)

- How would you define your principal markets?
 - Geographical markets:
 - Product markets:

- Have you used market research of any kind, and if you have, for what reason? (potential motives: a) how price changes influence customers, b) how interested are customers on your products, c) to find out the reaction of competitors, d) to get an idea of future developments in the market e) other?)

- Market research home markets/export markets?

- Do you advertise; if yes, how? Home markets/export markets?

- Which of the following is closest to the main aim of your advertising/marketing? (a) making your product known in general to potential customers, b) to make clear the difference between yours and competing products, c) to make clear similarities between yours and competitors' products) Any difference between home markets/ export markets?

- Do you ever sell at "different prices goods which cost the same" (at different mark-ups)? if yes: in different marketing areas, in home and foreign markets, for different customers, for large and small traders, other?)

3. REVIEW BRIEFLY the earlier info on the export history of the firm with the manager:

- Initial stimuli and reasons for exporting?

- Level of pre-export preparation and activity in export marketing?

- Export history of the firm (start, countries, share of exports of the turn-over...)

- What kind of uncertainty do you see was related to the decision to export? (E.g., learning, other firm-specific factors, exchange rate, demand etc....?) How do you see this influenced on your decision to start to export?

- Did the firm expand as a consequence of the exporting? (Cf. The numbers asked by fax in beforehand concerning the size of the firm before and after the exit year)

4. Withdrawing from export markets:

- When? (unless already known)

- Basic info on the firm at that time (as above, unless already known; asked by a fax in beforehand)
- Why? (compare with the reasons given in 1996; ask more if necessary)
- What was the factor that "triggered" the cessation of exporting? A threshold value? (explain if required)
- How and what type of negative feedback did you get from exporting?
- What kind of uncertainty do you see was related to the decision to withdraw from export markets? (learning, the exchange rate, demand abroad, etc....?)
- Did the firm replace export markets as a source of business somehow, and if did, how?
- Changes in the firm (organization, size, products, marketing ...) for exiting the export markets? (Cf. For the number given in the fax)
- Did you take any of the following actions when the problems in export markets started? (a) tried another product, b) reduced overtime working or introduced short-time working, c) increased sales efforts in export markets, d) increased sales efforts in home markets, e) cut prices, f) increased quality, g) other?)
- Do you think some form of export promotion or support could have made you to stay at the exporting markets? What do you reckon would have been best form of support?

5. Costs:

- What type of costs did the exporting involve?
- How large were these costs? (incremental costs above the costs of selling in Finland)
- Were the incremental costs smaller or larger than the incremental income from exporting above the income from the domestic sales? (I.e., in the end of the day, was the exporting project profitable, or did it cause losses?)
- In some, arguably common, circumstances it is optimal for firms to wait and absorb operational losses before ceasing the exports in total. Did

your firm run a loss in the export markets before the exports ended? For how long time (or how many deliveries)? How large was the loss of the value of the deliveries on average?

6. Potential re-entry

If not,

- Why not?

If yes,

- When?

- Why?

- How would you characterize the uncertainty related to this new entry to exporting? Do you think you waited for more sure signals on the expected profitability of exporting than in the first time you tried exporting? (longer time before the entry?)

- Why was entry successful at this time (if it was)? [to check against information on why was it not at the earlier time]

- Other similarities/differences between the two entries?

- Basic info on the firm at the time of possible re-entry (as above; asked by fax in beforehand)

- Any changes in the firm because of the exporting this time (as above)

7. A possible second withdrawal from exporting

- When?

- Why?

- Any similarities/differences between the two exits?

Other new material on the firm? (product brochures, newspaper articles.... etc.?)

* Permission to publish an anonymous case study report based on the interviews.